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Partners in Progress

Of all the words used in everyday conversation few are more exciting than "progress." This eight-letter word does as much to excite the imagination as any other term, technical or otherwise. One may speak of miracle drugs, atom power, solar energy, and electronics, and audiences think of almost unbelievable developments —but often without any thrill of excitement. Let a speaker, however, mention the possibility of a review of what progress means to the members of an audience, and one can almost hear a stir of anticipation. Somehow this precipitates a train of thoughts that even the most conservative listener finds difficult to hold within nonfanciful bounds.

THE JOURNAL of the American Medical Association is now 75 years old, although in this modern age there is a temptation to use the words 75 years young. It is not four score years old, and yet more significant events have occurred during this time than, perhaps, in hundreds of preceding years. It makes no difference whether one thinks of engineering, medicine, law enforcement, or any other field; the changes that have occurred are so dramatic, so challenging, it is difficult to think of any corner of the earth, any phase of life, that is not being affected. And this is only the beginning. What is on the horizon seems even more fantastic to contemplate.

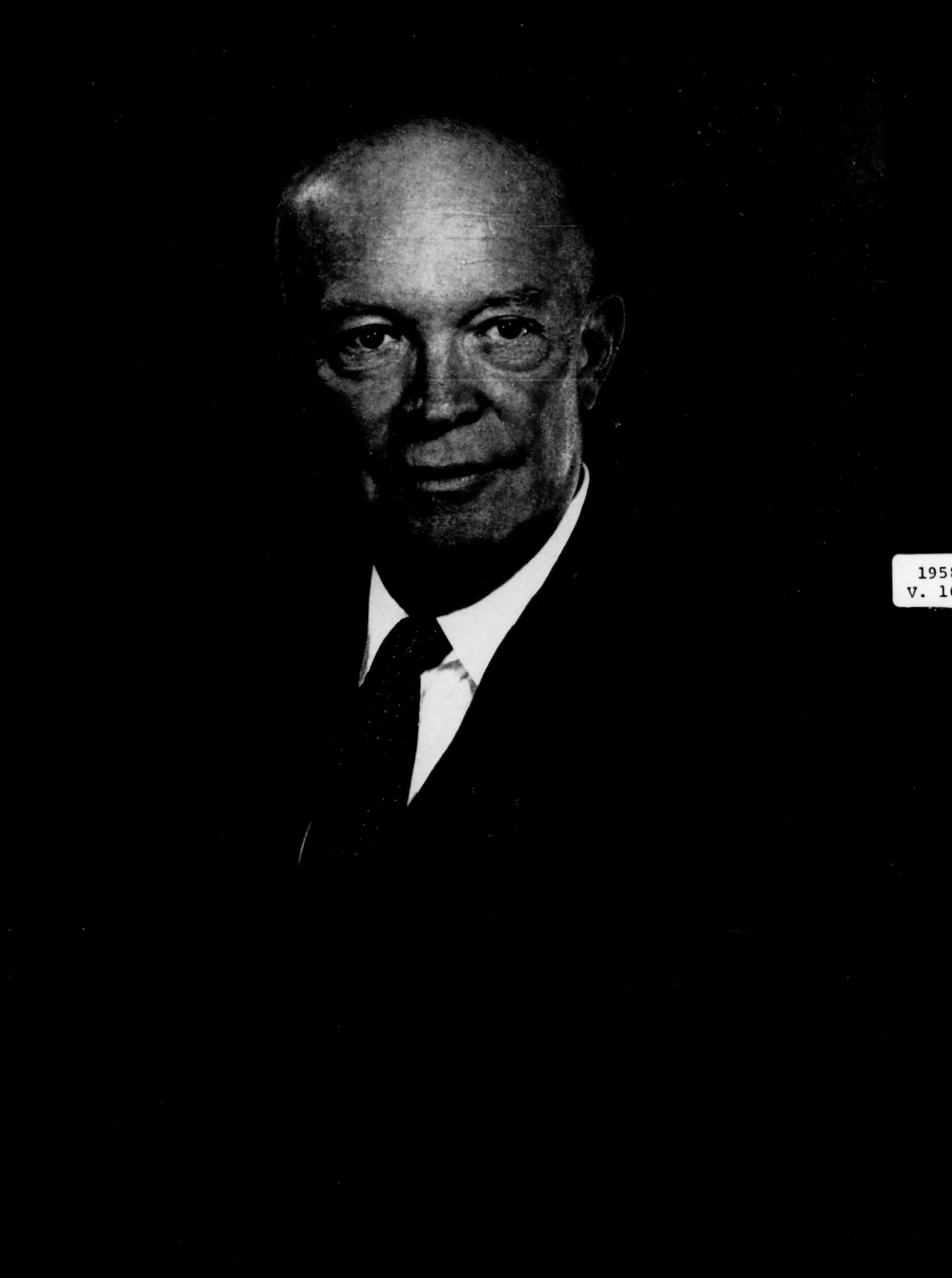
Most of us accept our modern miracles with little more than passing wonderment or sometimes momentary thankfulness. Often we do not understand; usually we do not appreciate. In fact, too often our eyes and our thoughts remain confined to our own fields of interest without realizing how much each field contributes to another, how much each is dependent on another, or how many people and how much training and experience are involved in the various areas of effort.

Elsewhere in this issue of THE JOURNAL are articles from acknowledged leaders in their fields. They are known internationally, and yet they can think in terms of the individual as well as of a nation or of the world. As one reads their writings, there grows a recognition and an appreciation of a fundamental fact: they are all partners in progress. No one could be a symbol for his field if he had stood alone or if his area of interest had been completely isolated from the rest of the community. They served their communities as well as their organizations or businesses and in so doing extended their influence throughout the country and even elsewhere in the world.

The practicing physician likewise serves more than his patient. He is part of community life, and his work influences as widely that of others as they in turn influence his work. No one can exist without the direct or indirect contributions of others, which is forcefully proved by the appearance of our guest contributors in the pages of this issue of THE JOURNAL. Physicians as well as our guests know this, but do others, especially those who are quicker with criticism than with thoughtful suggestion? Maybe the latter might be made candidates for the development of the theme "Partners in Progress." An explanation here, an example there, might be sufficient to change the misunderstanding critic into a helpful ally. If the people of the United States believe in the principles on which this nation was built, they must demonstrate a willingness to insist on the continuation of these principles. Leadership is necessary, but understanding is as important. Who can better provide the explanation and the examples than such men as our guest contributors and the many others who are acknowledged in their fields?

Writer, news commentator, industrialist, educator, name whom you will, are all partners in living in our country. This in itself engenders a depth of responsibility that is sobering, but when one remembers that much of the world today is looking for leadership, all of us must be mindful of additional responsibility as we work and play. Perhaps the people in some of the countries elsewhere might have had fewer problems if they had paused long enough in their work and play to encourage men and women to shake hands with each other as partners in orderly progress. Maybe there would be less fist shaking today.

Austin Smith



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THE WHITE HOUSE
WASHINGTON

April 9, 1958

Dear Dr. Smith:

It is a privilege to extend felicitations to the Journal of the American Medical Association on its 75th anniversary.

I have long been aware that the Journal has, throughout its lifetime, been a potent force for progress in the field of medical discovery and medical information. The contribution its editors make to medical advancement is reflected daily in better health for the people of this country and the world.

Throughout my lifetime of service in the Army, as well as in my present position, I have watched with pride and interest the giant strides that have been achieved toward a rising standard of health for people everywhere. The Journal of the American Medical Association has reported these advances faithfully, and its editors must share with me both a sense of deep accomplishment and the conviction that in the years to come the horizons are truly unlimited.

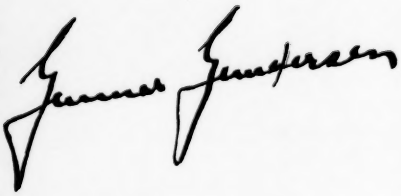
With best wishes to you and to the Journal,

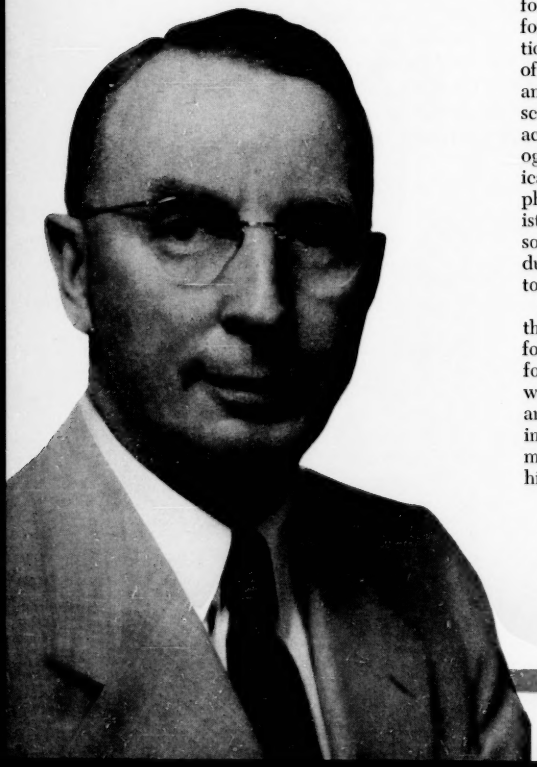
Sincerely,

Dwight D. Eisenhower

Dr. Austin Smith
Editor
Journal of the American Medical Association
535 North Dearborn Street
Chicago 10, Illinois

Medicine and the Community





When THE JOURNAL of the American Medical Association began publication in 1883, medicine was entering a dramatic era of scientific progress which has accelerated down through the years and which continues today at an ever faster pace. Although medical knowledge is a widening, deepening river, formed from the streams of work and observation by countless thousands of people over the centuries, the fact remains that medical science has advanced more in the past century than it had in the previous 3,000 years. This advance has been especially rapid and dramatic since the turn of the century.

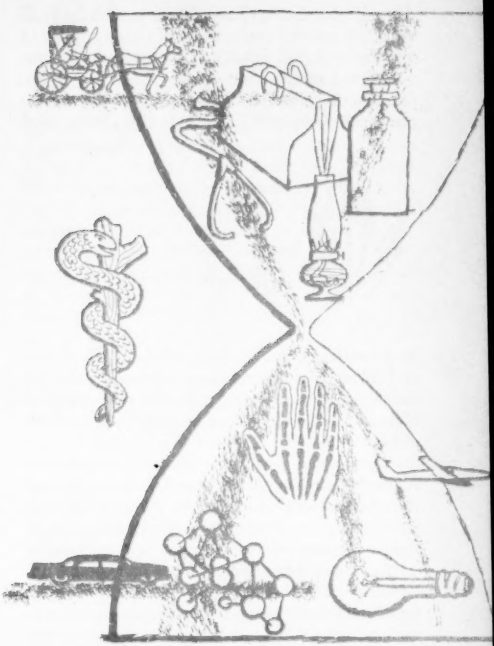
There were, of course, numerous historic milestones prior to the quickening developments of the period 1850-1900. Already accomplished, for example, were the discovery of the ligature for controlling hemorrhage, Harvey's observations on the circulation of blood, the conquest of scurvy, the discovery of smallpox vaccine, and the inventions of the stethoscope and microscope. A great deal of basic knowledge had been accumulated in such fields as anatomy, physiology, the cellular structure of body tissue, clinical descriptions of disease, and techniques of physical diagnosis. Advances in biology, chemistry, and physics were providing new tools, and socioeconomic changes stemming from the Industrial Revolution were giving added stimulus to scientific and medical progress.

So, during the last half of the 19th century, the stage was set for the exciting drama that unfolded. In the years just before and after the founding of THE JOURNAL, some giants were at work, leaving an indelible impress for humanity and medical history. Virchow and his successors in the field of pathology were making the monumental discoveries which for the first time in history provided a sound concept of disease

and paved the way for modern medicine and surgery. Pasteur, Lister, Koch, and the many other so-called microbe hunters were bringing the mysterious out into the open, by revealing that bacteria and other living organisms cause infectious disease. Patrick Manson, Theobald Smith, and Walter Reed were showing that many diseases are transmitted by insects, parasites, and other animals. Twelve years after THE JOURNAL began publication, Roentgen discovered the x-ray and thus opened new vistas in both diagnosis and treatment.

THE JOURNAL was born at an exciting time in medical history, and ever since then it has played a leading role in transmitting new medical knowledge to the physicians of America and the world. Around the turn of the century, and in the years following, the great Sir William Osler correlated the growing mass of knowledge into an exact clinical application of diagnosis and treatment. During the first quarter of this century new attention was being paid to such things as nutrition, metabolism, glandular functions, and the general field of body chemistry. Dramatic discoveries were made in connection with the cause and treatment of diabetes, pernicious anemia, and other noninfectious diseases. At the same time, rapid progress was being made in public health and sanitation, disease prevention through immunization and quarantine procedures, the development of specific drugs for treatment, continued refinements in surgery, anesthesiology, and obstetrics, the radical improvement of American medical education, and the constant upgrading of hospital facilities and standards of care.

Despite this exciting march of medical progress up to about 1925, the advances of the past 30 years have been even faster, more dramatic, and certainly more difficult to keep up with. An amazing number of words, terms, techniques, and products which today are commonplace in our medical vocabulary did not even exist only three decades ago. Everyone, of course, is familiar with the tremendous impact of the so-called wonder drugs, the sulfonamides and antibiotics, against pneumonia and other bacterial infections. New chemicals have been introduced to combat tuberculosis, malaria, and high blood



pressure. Anticoagulants and liver extract, unknown 30 years ago, are in common use today. As a result of advances in the field of endocrinology, various hormones have been identified and synthesized for use against arthritis and other chronic ailments.

Antihistamines have become valuable tools in the field of allergy. Tranquilizing drugs and other new forms of chemotherapy are aiding the fights against mental disease and alcoholism. Vitamins, just gaining recognition a generation ago, have greatly reduced the extent of deficiency diseases and have helped improve the general nutrition of our people. New knowledge of the human blood has brought dramatic life-saving techniques. Blood transfusions, used sparingly three decades ago, are commonplace to-

day. Blood banks have been established all over the country to assure an ample supply of whole blood and its various components. Plasma and dried plasma are being widely used. Replacement transfusions, which provide a complete new supply of blood, are now being used

to save the lives of infants with certain abnormal blood conditions. Recognition of the Rh factor and the discovery of different types of hemoglobin have opened up entirely new fields of blood research.

A generation ago many people thought that surgery had just about reached its peak, and they predicted that the future could bring little more than the refinement of operating techniques. Today, however, we are witnessing surgical operations which were considered impossible only 10 or 15 years ago. For example, surgeons are repairing various types of congenital and acquired heart lesions, removing entire lungs, replacing segments of blood vessels with grafts or synthetic substitutes, and transplanting corneas from one eye to another. They are being helped in very great measure by notable advances in the knowledge and administration of anesthetics; the giving of blood, other fluids, and antibiotics; the use of low temperature procedures; the artificial heart, lung, and kidney machines; bone graft banks; eye banks; and blood vessel banks. Meanwhile, surgical patients are being put on their feet sooner than they used to be. This not only has improved and speeded postoperative recovery but also has insured a faster turnover in occupancy of hospital beds.

Thirty years ago the science of virology was in its infancy, but now it is reaching an age of rapid development. An increasing number and variety of viruses are being recognized, isolated, classified, and grown in laboratory cultures. Their relationship to specific diseases is being studied and determined. The development of the poliomyelitis and influenza vaccines has blazed the trail for new studies which give promise of reducing the toll from many other ailments caused by viruses. Numerous cancer research workers are investigating the possible relationship between viruses and malignant growths, and there are indications that they may be on the verge of important findings.

All of this, plus much more that I have not included, would be of interest only to students of medical history had not the constant stream of knowledge been translated into practical methods of examination, diagnosis, treatment, and prevention—for the everyday use of practicing physicians in their communities. The scientific progress has been accompanied by many other developments affecting both doctors and patients—the growth and increased utilization of hospital facilities; the increase in specialization; the evolution of clinics, medical centers, and various forms of group practice; the remarkable development of voluntary health insurance, especially in the past 10 years; the steady growth of public health activities; the rise of the national voluntary health organizations; the public's mounting interest in health and disease; the federal government's increasing

activity in the fields of medical care and medical research; and many other socioeconomic factors involving the organization and financing of medical services.

Keeping pace with the ever changing complexities and problems of medicine, the American Medical Association down through the years has steadily expanded its activities to serve both the profession and the public. For example, the first scientific exhibit was presented in 1899; today, a typical A. M. A. annual meeting features almost 700 scientific and technical exhibits which make up just one part of a huge, five-day postgraduate course. Starting in the years just after the turn of the century—and I am giving only a few chronological highlights—the Association formed councils, bureaus, and committees to study and disseminate information in such fields as standards of medical school and hospital training, evaluation of new pharmaceutical products, the operations of quacks and cultists, public health education, legal medicine and legislation, medical appli-

ances, foods and nutrition, the costs and distribution of medical services, the health of industrial workers, the effects of social and economic changes on medical practice, rural health problems, medical motion pictures and television, public relations, national defense, federal legislation, mental health, alcoholism, the problems of aging, and the medical aspects of hypnosis.

This list, which is far from complete, helps to illustrate the changing medical picture and the fact that modern medicine cuts across all phases of community life. Whether one is thinking in terms of maternal and infant care, a child in school, a boy on an athletic field, a worker in a factory, a farmer in the field, a draftee in the armed services, a housewife in the kitchen, a community health problem, a drunk on the corner, poliomyelitis immunization, Asian influenza, or the need for an effective poison-control center, the profession is doing something about the medical aspects of the problem, and it stands ready and able to help others who are interested.

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Modern medicine has progressed over the years not simply through its own efforts but also by virtue of the help and cooperation given by many segments of American life—industry, labor, education, private philanthropy, the great foundations, government, and, above all, the general public. Today, more than ever before, medicine is interdependent with the business and economic life of the nation and is caught up in all the countless cross-currents of public interest, public opinion, and political action. This creates a variety of problems arising from different viewpoints and ideologies, but it also presents many challenging opportunities for leadership, cooperation, and understanding.

The medical progress which I have sketched only briefly has made drastic cuts in the incidence and death rates of many diseases which once were serious health problems. It has increased the average life expectancy at birth almost 23 years since 1900. Over the same time span the proportion of people 45 years of age and older has risen from 18% to 29%. As a result, medical emphasis is shifting from the infectious, communicable diseases to the chronic or degenerative diseases which take their greatest toll in later life—heart disease, arteriosclerosis, high blood pressure, cancer, arthritis, and similar ailments. Increased attention also is being given to neurological diseases, mental illness, emotional disorders, and respiratory ailments, such as the common cold, hay fever, asthma, and sinusitis.

The future will see even greater emphasis on disease prevention, maintenance of good health, and effective rehabilitation of the disabled. Technological advances, aided in great measure by new developments in electronics and atomic medicine, will reveal a multitude of facts concerning cardiovascular diseases, cancer, mental and nervous disorders, and various chronic ailments. An increasing proportion of medical services will be provided through clinics, medical centers, and various types of group practice. There will be interesting new developments in the design and operation of hospitals. Voluntary health insurance, if it is not destroyed by government ventures in compulsory health insurance, will solve the problem of medical care costs for all the people of the United States except the indigent. The latter, as always, will be taken care of by private and public charity, and it may be possible that plans for the indigent also will be financed on an insurance basis.

The future of American medicine is bright, if we can continue to work in an atmosphere of freedom, motivated by the dual spirit of enterprise and cooperation. The dominant socioeconomic challenge of the present is to preserve that atmosphere and that spirit.

Gunnar Gundersen
President of the American Medical Association

American Chemical Industry

During my lifetime—and I am a good many years younger than THE JOURNAL of the American Medical Association—there has been a spectacular evolution in industrial chemistry, particularly in the United States. In addition to the fundamentals of demand and supply, I believe that my industry's growth has been affected by two unusual factors. The first is the remarkable attraction it has exerted for restless people who are dissatisfied with the way they find things on this earth. They want to change them for the better. The second is that those people have been unusually quick to seize not only upon chemistry's own discoveries but also upon the advances achieved in most other fields of human endeavor. Here I will mention only chemical engineering, electrical engineering, mechanical engineering, biology, education, forestry, medicine, veterinary medicine, geology, business administration, accounting, psychology, law, mathematics, and public communications. There are many others.

It can fairly be said that until the time of World War I the world was dominated by the foreign chemical industry. Before those days, the United States had little or no tariff protection, and a lot of people in this country wanted little or no part in such protection. I credit three tariff laws—the Payne-Aldrich Act of 1909, the Underwood Act of 1913, and the Fordney-McCumber Act of 1922—with setting the stage for the development of the chemical industry in this country.

Chemical manufacturers were compelled to fight the British bleaching powder cartel and the German bromine cartel in the earlier years of this century. These wars—and they were wars—would not have been necessary if our industry had been given the protection it so sorely needed when it was striving to get off the ground. Let us hope there will be more alertness to providing protection, where deserved, in the future than there has been in the past.

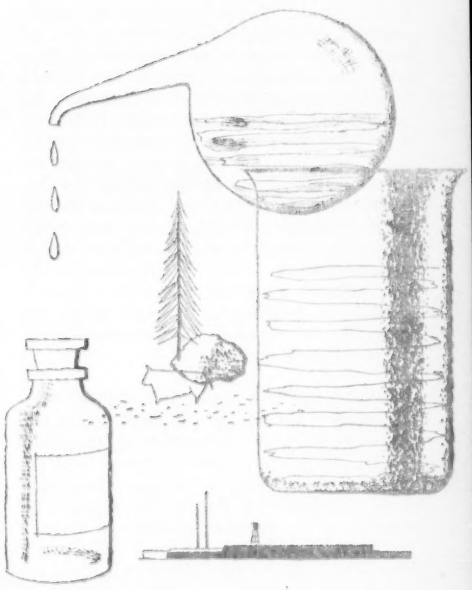
European domination of the American market was one fact of life which all of the early chemical companies had to face. However, enterprising Americans with the will to compete had developed a chemical industry of sorts from colonial times. Yet, even as late as 1880, the chemical industry occupied only a minor place in the industrial life of our country. It employed 10,000 persons, had an investment of 25 million dollars, and sold some 35 million dollars in goods annually.

By 1914, employment was 32,000, investment was 225 million dollars, and sales came to 160 million dollars. Four years later, these figures had been multiplied approximately threefold. Sales totaled about 500 million dollars. They reached this then-enormous figure because of World War I. But today, each one of the top five American chemical companies equals or exceeds 500 million dollars in annual sales.

In the United States now, there are about 12,000 chemical plants manufacturing in the neighborhood of 9,000 different products in commercial quantities. The industry employs well over one million people, has an investment which exceeds 35 billion dollars, and has annual sales topping 25 billion dollars.

During the early 19th century, the industry was devoted almost entirely to the extractive methods of chemistry. In the latter part of the 1800's, the industry entered the reactive phase, and this was soon followed by the synthetic phase. During this latter period, the chemist was faced with the problem of gaining acceptance of synthesized products as being equal to or better than products derived from natural sources. Was wintergreen oil produced from natural sources better than methyl salicylate, or vice versa?

About this time an interesting case got into the courts of law. A soft-drink manufacturer was accused of adulterating his grape drinks by



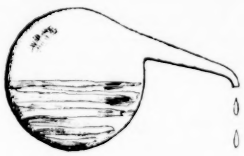
adding methyl anthranilate, a synthetic grape flavoring. Upon analysis, the drinks were found to contain methyl anthranilate. The expert chemist who was called as a witness so testified, but, when asked by the judge who had added the chemical, he replied, "God put it there, since all grape juice contains methyl anthranilate." Now synthetics are widely accepted, often as improvements upon natural substances, but this was not always so.

The U. S. Census report of 1880 noted the limited production of alkalis in this country. But one year after THE JOURNAL was founded, an ammonia-soda plant was built at Syracuse, N. Y. A soda-ash plant was in operation in Michigan in 1895. Bleaching powder was being commercially produced in Virginia in 1896. About the same time, electricity was being used to produce bromine and chlorine from Michigan brines. Elemental phosphorus production via the electric furnace began at Niagara Falls in 1897. The next year calcium carbide production began by electric furnace reduction. Meanwhile, Herman Frasch conceived his idea of mining underground sulfur with live steam, and within a few years America led the world in producing sulfuric acid. In 1909, with use of a European process, fixation of atmospheric nitrogen was being performed at Niagara Falls, N. Y.

An interesting aspect of chemistry in the early 1900's was that it was using designs and equipment developed by the mining industry. Today chemistry is still being advanced through the contributions of mining and metallurgy. Steel, chromium, manganese, vanadium, molybdenum, titanium, nickel, cobalt, copper, and many other metals and their alloys made it possible to develop the materials which can withstand the pressures, temperatures, and corrosions of newborn chemicals.

But many chemists can easily remember when chemicals were being produced by batch processes in such equipment as stoneware crocks, glass carboys, and enameled bathtubs. Aspirin was first made in bathtubs. The crystals were ladled out of the mother liquor with wooden scoops and then washed and dried in centrifugal laundry dryers lined with canvas bags. The bathtubs were cheap and served the purpose, since no other apparatus was available.

Until World War I, the American chemical industry dealt largely with inorganic chemicals. Germany was recognized as the country of chemical research and chemical knowledge, particularly in the organic field. In July of 1916, a cargo of dyes and other chemicals arrived in Baltimore on board the German submarine "Deutschland." The same submarine brought a second cargo to New London, Conn., in Novem-



ber of 1916. On April 6, 1917, the United States declared war on Germany. These, then, were the last shipments to arrive from the chemical empire of the world. We were left stranded. Or were we?

Quietly, and built upon daring and often impatient research, the American industry was about prepared to start leapfrogging in organic chemistry. In December of 1916, one chemical company succeeded in synthesizing indigo. Others entered the coal tar dye business at about the same time. When Spindletop blew in in 1901, no one foresaw the influence of the oil industry on the chemical industry. It was not generally recognized at the time, but the raw materials for petrochemistry were assured. This was the beginning of a new era.

Now the United States is producing thousands of organic compounds, many of them discovered in early research but simply shelved or remaining unrecognized until society advanced to "catch up" with them. In this connection, it is somewhat entertaining to recall that, in 1914, a chemical company was finding it very difficult to produce a chemical called monochloromethyl acetate. A "bug" in the process resulted in the formation of a then-worthless substance known as vinyl chloride. The chemists went to a lot of trouble to eliminate this substance, which today is accorded considerable respect as vinyl plastic. Many chemical companies can cite similar instances in their history.

Early in this century, chemical research began changing. The lone chemist, who, sometimes with the assistance of a helper, discovered something and painstakingly began developing a way to make it in larger and larger batches, has been replaced by systematic effort in chemical company laboratories.

The last two decades have seen great developments in research methods and techniques of bringing all the necessary technical specialties to bear upon the problem at the same time. Experimental work, materials handling, equipment design, and manufacturing techniques are approached simultaneously as parts of one package. The results can be seen not only in new products, new processes, and new applications but also in the staggering growth of the industry.

Until about World War II, natural gas was a nuisance to the oil producer. If a driller struck gas, the well was promptly capped and abandoned. The gas which propelled the oil to the surface was separated at the well—the oil pumped to storage, the gas vented and flared and wasted forever. You could read a newspaper by the light of flares while driving at night in almost any direction out of Houston.

In the 1930's, the flares began going out. The full significance of Spindletop was being recognized as the Gulf Coast petrochemical industry began developing. Before that time, organic chemistry had largely been based upon coal tar.

Now the ethylene and propylene made from the former waste products of the petroleum industry are building blocks for a wide range of chemicals, such as glycols, alcohols, styrene, and polyethylene. Methane, or common cooking gas, is the mother of a whole family of useful solvents and acetylene products. Discoveries still undreamed of will yet be made.

The breakthrough in the American chemical industry was paced by the development of new tools and instruments to measure, record, and control chemical reactions. The pH analyzer and recorder and the oxidation potential analyzer and recorder opened up new methods and means of chemical production. They were only the forerunners of many analytical and controlling devices which are rapidly leading us to automatic operations in the fullest sense. Not too far in the future, we can expect to see computers handling the job—preparing the optimum operating conditions and controlling the operations automatically.

We who have lived through the past 50 to 60 years have been most fortunate to have seen the developments of this fabulous period. Our standard of living has been improved by development after development. Water and sewage treatment with chemicals has made modern urban society possible. Food production via fertilizers and insecticides has pushed the Malthusian theory back a few centuries. Chemical feed supplements, vaccines, pesticides, and veterinary medicines for cattle and other animals have cut diseases to a minimum. Since 1935, when the sulfonamides were introduced, and the 1940's, when penicillin was made widely available, the use of chemotherapy has in many hundreds of thousands of cases caused death to take a holiday.

In the fast-moving chemical industry, knowledge has been accumulated at such a pace that the college senior of yesteryear sees the freshman of today using his textbook. Soon colleges must face up to the fact that they must extend their courses to five years or more in order for their graduates to prepare themselves adequately for the problems they must face and solve in industry.

Even so, the educational process does not stop when the sheepskin is framed and hung. There is no marking of time or pausing for breath for those people who intend to change things on this world. In chemistry, as in medicine, the "changers" provide something new, something of interest, each day, each week, each month.

A. P. Beutel
Vice-President of the Dow Chemical Company
and General Manager of its Texas Division

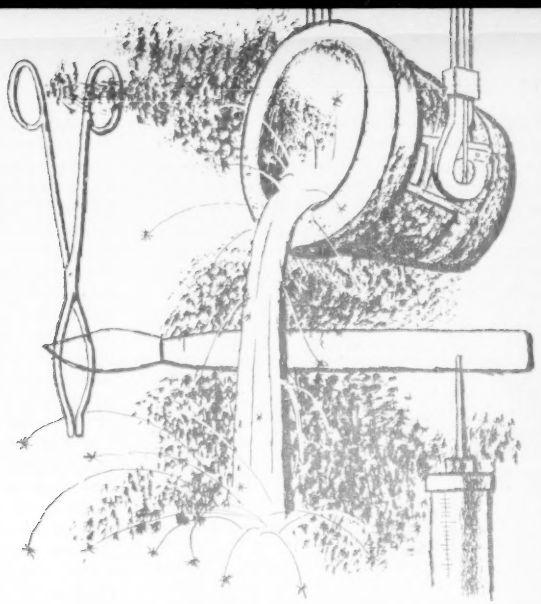
Good Medicine for Industry

Roger M Blough

In the 75 years since THE JOURNAL was first established, the United States has completed the transition from an agricultural to an industrial economy. It is this change that has given us a standard of living unparalleled in the world today. Our leadership in world affairs has stemmed in considerable measure from the phenomenal development of our industrial productivity.

Modern steelmaking began in this country with the introduction of the Bessemer process about 100 years ago and of the open hearth furnace about 90 years ago. So large-scale production of steel in America is very little older than THE JOURNAL. The intervening years have produced a tremendous increase in the per capita use of steel. In the past 75 years, steel capacity has risen from 556 lb. per person to almost 1,600 lb. per person. These same 75 years have produced a tremendous increase in medical knowledge and in diagnostic and treatment techniques.

In the years following the passage of the first Workmen's Compensation statutes in 1911, large industries, and especially heavy indus-



tries, recognized the need for doctors and nurses in their plants to furnish readily available, competent care for injured employees. In addition, preemployment examinations were begun to assure that an applicant was physically suited for the job.

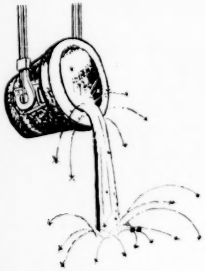
In the ensuing years there developed, through a combination of engineering and medical knowledge, the science of industrial hygiene and toxicology—its purpose has been to assure a healthful work environment in industry. Through a study of air contaminants and other potentially harmful agents in the plant, this science has made it possible for industry to make use of the many thousands of chemical and physical agents with which it now deals, without harm to employees.

World War II furthered the beginnings of a significant change in medicine's service to industry. In that struggle for survival the productive capacity of every individual was needed to produce the tools of war. Out of that experience it became apparent that there were ways in which preventive medicine could assist in maintaining and improving the health and, hence, the productivity of people at work. A number of industries, including United States Steel, are involved in a realignment of their medical programs to make use of this newer knowledge.

No longer will the sole, or even the primary, objective of industrial medicine be the treatment of injuries. Regrettably, there are still industrial injuries to be treated. However, the safety movement in American industry has produced a marked change in the incidence of industrial accidents. In the U. S. Steel Corporation, the lost-time accident frequency rate has been reduced over 95% since 1912. We are proud of the fact that in 1957 the frequency rate in the steel producing divisions was 1.31. Our goal is an accident frequency of zero. Today a steel mill in this company is a much safer place to be than the home or the highway, and this is true of almost all of the large industries and most of the small ones in the United States.

These newer industrial medical programs are primarily preventive in nature. Beginning with a placement examination, they follow the health

of the individual at work. Through health education, medical counseling and guidance, attention to the effect of the work environment on employee health, early disease detection, referral to the family physician for definitive treatment, and follow-up of the man on the job, they bring to the individual employee an effective form of health supervision and guidance that works closely and well with the family physi-



cian. Such developments in industry have the sanction of organized medicine and are entirely in keeping with the code of ethics of the medical profession. In 1955, the American Medical Association set up a certifying board to recognize physicians who have special competence in this relatively new field of industrial medicine. Last year, the House of Delegates of the American Medical Association officially endorsed a statement outlining the scope, objectives, and functions of occupational health programs. Thus, as industry and medicine have grown in size and competence, they have also grown closer together.

There is another relationship between industry and medicine that has grown rapidly in the last two decades. I am told that over 100 million people in the United States now have some form of prepaid hospitalization insurance. Prepaid coverage of other aspects of medical care has also been growing rapidly. A significant majority of this represents coverage through industrial group insurance plans. In most of these plans industry pays a part, usually half, of the cost. This is true in my company, where the group insurance plans are designed on the 50-50 principle. Last year, employees of this company or their families received $32,400,000 for benefits other than life insurance under these plans, and a major portion of this amount was directly related to doctor and hospital bills.

One can foresee an increasingly close relationship between medicine and industry. New technology will produce new potential health hazards that will need to be evaluated and controlled. But perhaps even more significant is the recognition of the importance of the individual in the production scene. Not only is physical well-being important to full, individual productivity, but mental health as well. We are aware of the impact of emotions on safety and production and of the problems that interpersonal relationships in industry can produce. Doctors are unique in that their entire career is devoted to the study of the individual. One of the functions of the physician is to assist his patient in understanding himself and his relationship to others, in understanding his motivations and his reactions to his environment. The physician is a logical source to turn to for assistance in the search for mental health in industry.

Industry also needs from the medical scientists knowledge of the degenerative diseases and cancer, which daily take their toll at all levels in the industrial structure. Superb progress has been made in the prevention and treatment of infectious diseases. But the coronary attack continues to fell men whose talents and experience are so valuable. It is the fond hope of all that we will one day understand these processes and know how to prevent them. This hope is supported by the great strides in medical knowledge in the recent past.

This progress augurs well for the future and points to an increasingly close relationship between industry and medicine. We should see to it that such relationships carry full recognition of the dignity of the individual, and have as their single goal the health and well-being of industrial America.

Roger M. Blough
Chairman of the Board of the
United States Steel Corporation

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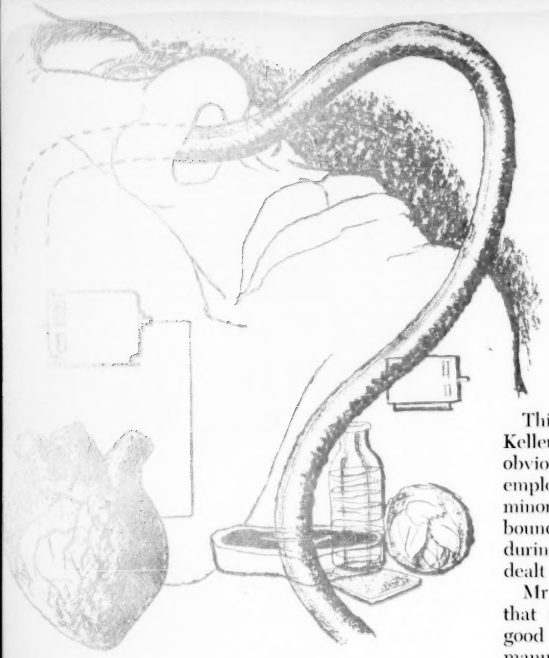
Bitters.—The following official investigation and decision [from the Treasury Department] concerning articles called "bitters," but composed chiefly of alcoholic drink, is worthy of permanent record. Clifford Richardson, Esq., assistant chemist of the Agricultural department, has done me the favor to make a careful analysis of a bottle of the "bitters," and finds it to contain as follows: Absolute alcohol, 32 per cent, Water, 64 per cent, Extracts, only, 4 per cent. He says it is made from a strong alcoholic liquor flavored with various essential oils, as oil of anise, coriander, etc., and contains some vegetable bitters, such as gentian, cinchona, etc. It will be seen that the bitters contain at least 65 per cent. of proof spirits, which will be equal to about 82 per cent. of ordinary whisky at 80 per cent. proof, obviously much more spirits than is absolutely necessary to hold the other ingredients in solution. Containing, as it does, no deleterious drugs and only 4 per cent. of anything like a drug, I should probably be entirely justified in deciding outright that one who sells it for any purpose is a retail liquor dealer. . . . The department is of opinion that, notwithstanding they may be classified under the internal-revenue laws as medicinal bitters, they should be excluded from Alaska under the executive order of February 4, 1870, forbidding the importation of distilled spirits into that Territory. The courts have decided that certain bitters, substantially similar in character, imported into the United States are dutiable as distilled spirits. You will take action accordingly, and in future seize importations of such bitters into Alaska, and dispose of them in the usual manner. [From the Collector of Customs, Sitka, Alaska] Should I hold it to be a medicine, I should probably do violence to an almost irresistible tendency of the mind to conclude that no genuine medicine needs so much whisky and so few drugs in it, unless under very unusual circumstances. On the other hand, should I decide that it is no medicine at all, I would be confronted by a ten-year' quasi recognition by this office to the contrary, as well as by the practice of many people who use it as such.—Miscellaneous, THE JOURNAL, vol. 1, Sept. 8, 1883, page 281.

Asthma.—Asthma is proverbially considered to be the most intractable of all diseases. Indeed, so uncertain is the effect of any remedy in its treatment, in different individuals, that physicians not unfrequently depend more on the experience of the patient respecting any particular remedy than upon the logical administration of remedies to meet the symptomatic indications. This capriciousness of asthma has led to the most diversified views as to its etiology and pathology, which to the present time has been the most imperfectly understood of any disease with which we are so familiar. Since the time of Laenneck, numerous theories have been proposed to explain the cause and phenomena of the disease, but none have met with more general acceptance than the one proposed by Laenneck himself, that asthma is a neurosis, and depends on either a functional or an organic change in the nerve centers, producing a spasm of the bronchial muscles, and consequent narrowing of the tubes during the attack. This theory of the nervous origin of asthma is founded mainly on the assumption that diseases which cannot be traced to organic lesion, are manifested in symptoms of derangement of the nervous system. . . . [It has been known that] derangement of various organs and disease of various parts of the body would provoke attacks of asthma, and disease in one part or organ will cause, through the agency of the sympathetic nervous system, derangement in another organ, even in remote portions of the body.—John O. Roe, M.D., THE JOURNAL, vol. 1, Sept. 5, 1883, page 295.

Sanitary Science.—Without obedience to the laws of health, it is impossible to secure the highest culture of the citizen—physical, moral and intellectual—and perpetuate the prosperity, freedom, and glory of the State. . . . Sanitary science, therefore, is a segment of political economy, and should receive encouragement by the State as a wealth-creating factor—riches, indeed, to the whole people far above that of any other earthly value. It has become a classic saying that "public health is public wealth"; but who can estimate it rightly? Every case of sickness and the loss of every life from preventable disease is a tax upon the material wealth of the State and a great sorrow to the family. Count the number of deaths in a community for any given period, multiply it by thirteen—the estimated number of sick on hand for each death—and you have the average total of sick persons cared for at an expense much greater than would have been necessary for their support in health. In addition to this estimate, let us remember that at least one third of all the cases of sickness and of the deaths that occur are preventable; that this suffering and continuing tax on health and life is in direct antagonism to industry and the general prosperity; that the visitation of diseases falls heaviest always on the poor and most helpless classes of the community; and that the pressure of bad health and poverty, with their far-reaching ill effects upon the growing and reproductive parts of the population, tends to deterioration of the race. In times of epidemic visitation, all these ill influences culminate in general distress of the people. . . . Finally, in exerting my efforts in advocacy of the cause of sanitary progress, I should commit a serious blunder if I neglected to bespeak the assistance and co-operation of the ladies. Women gave Massachusetts the first State Board on Health in the United States, and from that beginning—in 1869—twenty-eight States have followed the example. There is yet much work for her to do, and none can do it as well as she; and no cause possesses a stronger claim upon her sympathies and affections. As science advances, she gradually acquires her true position in the scale of social life. Of the world's inhabitants, 750,000,000 universally hold woman in a state of bondage and degradation; 250,000,000 alone allow her to approach her proper sphere by acknowledging the marriage contract, paying deference to her influence, and promoting her intellectual culture.—James E. Reeves, M.D., THE JOURNAL, vol. 1, Dec. 1, 1883, page 612.

The Doctor Automobile



Back in the early '20's, a young automobile executive named K. T. Keller and a close friend, a family doctor, were talking about the kind of medical care received by industrial workers of that time. Both thought the situation left much to be desired.

If a man hurt a finger or got some foreign matter in an eye, it was the practice of the time to find a doctor in the neighborhood of the plant who could give the man whatever immediate attention he required. The plants were not very well organized to deal with such situations or even, in most cases, to supply adequate first aid, and so treatment could not always be provided quickly enough to avoid complications or unnecessary suffering. Little, or nothing at all, was done for the worker who developed a headache or otherwise became ill during his working day. He had to either endure his aches until quitting time or go home.

This situation seemed unnecessary to Mr. Keller and his doctor friend. It seemed to them obvious that the most contented and productive employee was a healthy employee and that even minor illnesses occurring during a shift were bound to affect a man's work. Urgent illness during work, as at any other time, ought to be dealt with promptly and skillfully.

Mr. Keller and his doctor friend concluded that there was no reason why adequate and good medical care could not be provided in manufacturing plants by doctors and nurses employed by the companies on a full-time basis. There was no reason, either, why these doctors and nurses should not be highly qualified in their fields—men and women who lived up to the highest medical standards. Also, there was plenty for them to do in fulfilling their special roles without infringing upon the private practitioner. Indeed, if they did their jobs well they would assist and support the private doctor. They would supplement, not replace or compete with, existing medical services.

Within a few years, Mr. Keller had become director of manufacturing for the then new Chrysler Corporation and had the opportunity to put into practice some of the ideas that he and his medical friend had talked about. Mr. Keller was instrumental in establishing a full-time medical staff at Chrysler and later, as president of the company, he was responsible in large measure for many of the actions that made the corporation one of the pioneers in the development of occupational medicine.

and the Manufacturer

L. L. Colbert

So much has occurred since those days in protecting and maintaining the health of the automobile worker that we often overlook the fact that most of the advances had their beginnings in conversations between physician and manufacturer, such as those between K. T. Keller and his doctor friend three decades ago. Starting with a common concern for the well-being of the people who work in the automobile plants, the doctor and the manager have found that the occupational curiosity of one stimulates the imagination of the other. When they put their minds to work together, things happen that enrich not only them but the community in which they both live and work.

Neither doctor nor manager, for example, could be long satisfied merely with supplying emergency assistance to the victims of accidents or to those workers who became moderately ill during a shift. And so it was not long before doctors in the automobile plants were working with engineers and managers to reduce the causes of accidents and to control fumes, dusts, and mists which might endanger the health of the worker. This attack has been so successful that today an automobile worker is less likely to be hurt in an accident at work than at home. Toxic hazards have been discovered, isolated, and brought under control.

A logical additional step in the early-day evolution of inplant medical services was the examination of prospective new employees and the determination of whether they were physically fit to perform satisfactory work in automobile plants. Inevitably, however, doctors soon began to wonder whether the preemployment physical examination could not serve broader purposes than those originally intended.

One of those who thought about this was the late Dr. John J. Prendergast, medical director of Chrysler. Dr. Prendergast got to wondering about the ability of people who had recovered from tuberculosis to perform satisfactory work. With the support of Chrysler management, he embarked in 1938 on a program to make chest x-rays of new employees. He added to his staff an expert on internal medicine and pulmonary diseases, Dr. Marion W. Jocz, and arranged for the assistance of a leading x-ray expert, Dr. Carl C. Birkelo.

During a five-year period, more than 300,000 physical examinations, including chest x-rays, were made by Chrysler doctors. Altogether, more than 3,000 persons were found to have active or inactive pulmonary lesions—many of them being unaware of this until they applied for work in Chrysler plants or reported for a physical examination after an absence from work due to illness.

Out of these studies came a number of conclusions important to the automobile industry and to the medical profession as well. Among them, for example, was the knowledge that em-

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ployment of persons with certain types of inactive pulmonary tuberculosis lesions is practicable. As the doctors said in their formal report, "the usual conditions of employment in a highly mechanized industry do not constitute a threat to the health of such persons or to their fellow employees," and "the work record of these persons appears to be as good as that of other groups of physically substandard employees."

The formal results of this program were not published until 1948, but preliminary findings proved of immense value to the automobile industry during World War II. Young, physically fit men were entering the armed forces, and most applicants for employment in the plants were those unsuited for service because of age or because of various physical and other defects. Applying knowledge gained in the tuberculosis study, the doctors found that many people who in the past might have been denied work because of "physical handicap" could perform excellent work if they were assigned to an appropriate job. A man who could not see well close-up would not be suited for an inspector's job, but he might handle a jitney with great expertness. A man who could not do heavy lifting could operate an automatic machine or run a power lift. As Dr. Max Burnell of General Motors has said, automobile industry doctors concluded that "everyone is handicapped for some kind of work."

A number of doubts about employing previously ill people have been resolved by new medical knowledge. A study by Dr. Jocz and associates, for example, produced evidence that most Chrysler employees who suffered heart attacks could return to work after a suitable period of convalescence. Ninety per cent of the employees studied over a period of years were able to return to suitable jobs.

Most employees of this company who suffered heart attacks during this period were in the older age groups, compared with the general plant population. Because of seniority or ability they qualified in most cases for the lighter jobs, and so two-thirds of them were able to return to the work they were doing before their attacks. The other third had to be assigned to jobs involving some restriction of activity, but, since the automobile industry is so highly mechanized, this was not too difficult to do. Dr. Jocz, who succeeded Dr. Prendergast as Chrysler's medical director, reported that the survival rate of Chrysler employees returning to work after heart attacks "compares favorably with that of similar cases elsewhere, and their rehabilitation and performance on the job has been generally satisfactory."

We are much closer today to really "tailoring the man to fit the job" in the automobile industry, and we are gaining more knowledge all the time as a result of collaboration between the doctors and those who operate the factories.

Spectacular things have happened, too, when doctors and engineers have put their minds to work together in solving medical problems. Some years ago the distinguished Detroit surgeon, Dr. James Barron, concluded that in many cases of internal hemorrhage lives were lost primarily because the patient starved. In such cases the patient frequently is unable to take food in the normal manner, and Dr. Barron concluded that feeding by vein was not adequate.

A major step toward supplying sufficient food for such patients was achieved with the development of a thin plastic tube admirably suited for introducing natural foods into the digestive system through the nose. But two big problems remained: getting food in a form fine enough to be put through the tube, and introducing it at a rate at which it best could be assimilated. Dr. Barron mentioned these problems to Dr. Prendergast one day, and Dr. Prendergast suggested that perhaps the engineers at Chrysler Corporation could come up with the solutions.

Automotive engineers for years had been grinding and pulverizing various materials and pumping oil, gasoline, water, and other materials as part of their research and testing of automobile components. To solve the first part of Dr. Barron's problem, the Chrysler engineers suggested use of a colloid mill, such as that used in the cosmetic industry, for pulverizing and liquefying food fine enough to flow through the small plastic tube. Then, employing a principle that had been known to engineers for more than 100 years, they developed a simple, easily cleaned, sturdy, and trouble-free pump for forcing the food through the tube at rates desired by the doctors. The pump was called the Barron pump, and many similar to it are now in use in hospitals.

Similarly, Dr. F. D. Dodrill had an idea for developing an artificial mechanism which would take over the heart's pumping action temporarily while a patient was undergoing heart surgery. He took his problem up with Charles E.

Wilson, then president of General Motors. The engineers at GM went to work, and the result was the Dodrill-GMR mechanical heart, which now has been used successfully in many heart operations.

The doctors at Chrysler call upon the engineers for help in solving many problems—less spectacular, perhaps, than the Barron pump, but of great importance, nevertheless, in helping answer medical questions.

Chrysler doctors, for example, ran a study in cooperation with a medical center and a public health agency to determine whether heart ailments could be detected before attacks occur. In one of these tests they wanted to make use of a ballistocardiograph to detect body movements associated with heart beat. This proved to be difficult, however, because not far from the medical facilities there was a busy street and also a stamping plant. Passage of heavy trucks and the operation of the big stamping machines produced vibrations that interfered with operation of the highly sensitive ballistocardiograph.

The doctors knew that Chrysler engineers had been measuring and studying vibration in automobiles for years. In fact, one of the most elaborate and exact elements of the engineering establishment is a vibration laboratory. Applying knowledge gained in this work, the engineers built a table for the doctors that is practically free of vibration, and the study proceeded.

Collaboration between doctor and engineer works both ways. Automotive engineers always have been greatly concerned with building more safety into their products, and they frequently have turned to doctors for information and suggestions involving their problems. Chrysler Corporation and others in the automobile industry currently are supplying funds and cooperating with Cornell University in a program designed to produce new information vital to the industry in further safety advances. In this program, medical societies, state health departments, and state police are working together to compile detailed, specific information about the kinds of injuries sustained in automobile accidents. Many lessons learned already have been applied in such safety devices as padded instrument panels, recessed steering wheel hubs, and safety doorlatches, and there is no doubt that in the months ahead the program will produce much more solid fact on which to base engineering decisions of the future.

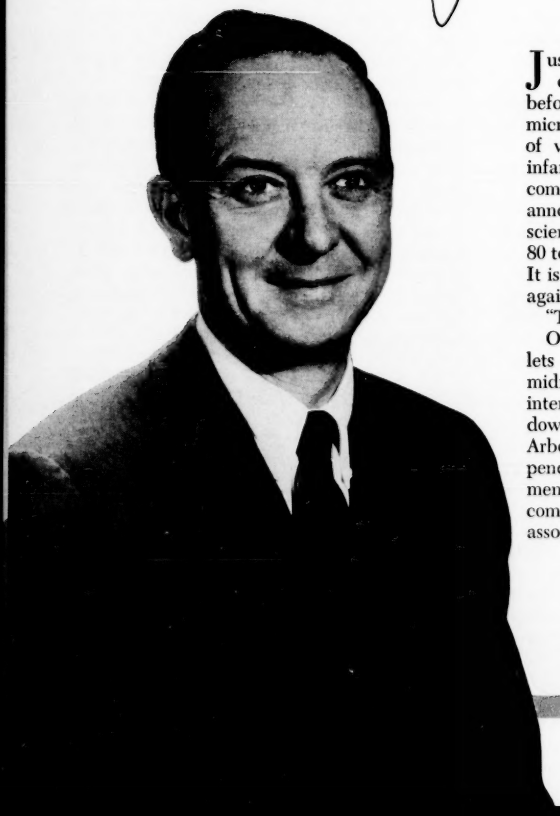
We have come a long way since those days when K. T. Keller and his doctor friend discovered their joint concern about the medical care received by industrial workers in the early '20's. Not only do employees today receive prompt and expert medical service if illness occurs during their working day, but much is done to prevent illnesses and to help them secure treatment before serious conditions develop. Industrial doctors consult with the employee, when he requests it, about his health problems or concerns. In many cases, the doctors detect the beginning of conditions which call for careful medical attention and are thus able to urge employees to go to their own physicians for further analysis and treatment.

Close cooperative ties have developed between the industrial and the private physician in many ways. When employees report for a physical examination after an absence due to illness, the industrial doctor frequently confers with the employee's private physician to make sure that the man is assigned to work which his own physician feels he is capable of doing. At the request of private physicians, industrial doctors also serve as consultants in cases where employees are referred to private doctors as a result of preliminary inplant diagnoses.

Doctors in the plants are thus able to supply private physicians with whom they work much information valuable to them in providing the best care for their patients. And the private doctors in return supply the companies with information that is equally important to them in the conduct of their businesses. This kind of creative partnership between doctor and industrialist undoubtedly will continue to grow, producing new and greater benefits for industry, for the medical profession, and for the community at large.

L. L. Colbert
President of the Chrysler Corporation

News Communications



Just after the middle of the morning on Tuesday, April 12, 1955, a colleague of mine went before an American Broadcasting Company microphone with the following bulletin: "A day of victory—victory over the dread disease of infantile paralysis. The official news has just now come from the outposts of the battle line. The announcement, after comprehensive, protracted scientific survey, is that the Salk polio vaccine is 80 to 90% effective in preventing paralytic polio. It is 60% effective against type 1 virus and 90% against disease caused by types 2 and 3.

"The vaccine is safe, effective, and potent."

On 3,700 radio stations and 500 television outlets across the United States that memorable midmorning, regular programming was being interrupted, fragmented, thrown out the window, as the words came pouring out of Ann Arbor, Mich. Network stations and big independents took the words directly from their men on the scene; tiny 250-watters in remote communities picked them up from the press association teletypes chattering excitedly.

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At 2:30 that afternoon I went on the air to introduce Dr. J. S. Salk himself. In that introduction I said, "This is a day of family rejoicing. Like the happy telling of the smallest details of a christening, a confirmation, a bar mitzvah, a wedding—like the sunny laughter of a cluster of relatives around a young mother's bed." Then Dr. Salk was speaking from Ann Arbor, discussing his victory, describing what had happened in the blood streams of those inoculated children, urging that antipoliomyelitis inoculation become routine.

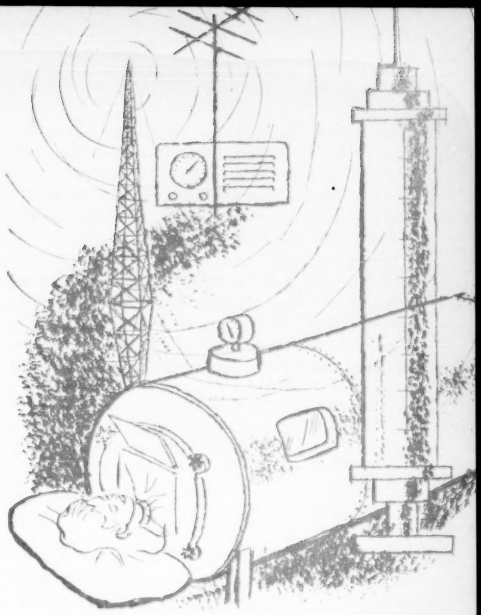
Meanwhile, at the speed of light, which has become our normal operating velocity in this strange, electronic medium, the word had crossed oceans and icecaps and wastelands, racing around the world to meet itself on the other side, diffusing effortlessly even through that most remarkable semipermeable membrane, the Iron Curtain: The vaccine worked.

Then the newspapers, the extra editions, were on the streets of the world with the big headlines and the column after column of side-bar stories--details, statistics, tiebacks, see what the health commissioner has to say, go interview 10 mothers.

"Words, words, words," cries Liza Doolittle. "I'm so sick of words!" But that day the human race couldn't get enough of the words; it hung over the little boxes, pored over the columns of type, picked up the telephone to talk it over with Myrtle down the street.

By midnight of April 12, it was a very insulated American, a very insulated human being, who didn't know that medicine had conquered paralytic poliomyelitis.

When I was asked to do this article on news as it is related to medicine, the first thing that crossed my mind was that Tuesday, April 12, 1955. It was, of course, one of the 8 or 10 biggest news days in a century not devoid of big news days, and none of us will ever forget it. But I think that it serves as well to illustrate the three general areas in which the modern news apparatus has become almost an adjunct of modern medicine—an adjunct whose importance neither you nor I tend to realize in the daily round of work.



First, there is the news dissemination itself. Human beings, as you may have noticed, take an intense interest in themselves. Nothing as personal and important to the individual as medicine can fail to have a tremendous impact on the community. The communications business, keyed above all to what is interesting, devotes great portions of its time and space to medicine—only wars, dictators, congressional committees, and the weather claim comparable attention. All newspapers of any consequence carry regular medical columns. So do the major weekly newsmagazines. Every new medical advance of other than the most technical interest is chronicled somewhere in the nation's press, radio, or television.

The process can be carried to extremes, of course; I recall the tale of the eminent hypochondriac who rushed into his doctor's office waving the latest edition of a well-known monthly magazine and crying, "Oh, I've got it, doctor, I'm done for." He pointed to an article describing in grisly detail a rare tropical malady, invariably fatal. The most remarkable feature of this ailment, from a medical standpoint, was

that it had absolutely no symptoms. From the onset right through to the end, the patient felt fine, ate heartily, seemed to glow with health.

Flinging his arm tragically across his chest, the hypochondriac moaned, "And that's just how I feel, Doc; oh, save me, save me!"

Yet in its apocryphal way, this little vignette illustrates my point perfectly. It is this vast, continuing lay dissemination of medical developments—spotty though it may be, frequently a headache to you though it may be—which has made attainable the high national health stand-

ards of today. I would, in fact, submit that public health as we know it would be a flat impossibility without the modern machinery of news.

The effects of Asian influenza are being kept to a minimum in the United States because when newsmen first heard of the epidemic they went to doctors, asked what people should do about it, and then told the people. One wonders how many of our 170 million or so citizens would have known there was an epidemic, much less what to do about it, if there had been no mass media to tell them.

In 10,000 Chinese village squares, carefully pretuned radios are crying, between Oriental Marxisms, "Swat the fly!" Substandard diets are disappearing because news has reported medicine's work in nutrition ever since thiamin was discovered in 1897. And, to return to my opening illustration, the millions of young people now protected against poliomyelitis are protected because, since April 12, 1955, reporters have been telling them about the vaccine.

We newspeople had a chance to check up on our own effectiveness in the medical area back in 1948, and I think the figures deserve mention here. On April 29, 1948, ABC radio presented a public affairs documentary, accurately titled, "VD: A Conspiracy of Silence." Breaking a major taboo—with, I admit, some trepidation—we did a program frankly aimed at locating infected individuals, persuading them to come to the clinics, and detailing new, highly successful treatment for venereal diseases. Then we ran a survey on our results.

One clinic we spot-checked reported that 25% of the people who came to it in the following weeks learned of it through our broadcast. In one state, 20,000 cases of syphilis were discovered and cured as a result of "VD: A Conspiracy of Silence."

The revolution in the nation's thinking on mental illness can, I think, be credited in great degree to the mass media. A torrent of newspaper, magazine, radio, and television pieces on mental disturbances have brought us, at belated last, to the civilized realization that insanity is an illness, to be regarded, treated, and, increasingly, cured as such.

The point needn't be labored; examples are legion—cancer, alcoholism, heart disease. It could even be argued that, in the complex and highly septic civilization we have evolved today, if there were no such thing as a news industry the medical profession would have to invent it.

Similarly, this continuing coverage has done an enormous public relations job for the medical profession itself. The "Medical Horizons" series took viewers inside dozens of hospitals, even inside operating rooms themselves; it is hoped that the program had the effect of making both doctors and medicine more comprehensible and less fearsome to the audience. All the networks, all the news media, have contributed to this vital understanding.

The second area where I believe news has played a major role in medical work is financial. It was March of Dimes money that supported the Salk experiments, and it was the nation's news media that supported the March of Dimes, with free time and space, with special broadcasts and articles. The United Cerebral Palsy Foundation estimates that in seven years of telethons it has collected between 15 and 25 million dollars for cerebral palsy research. Similar bulky war chests have been raised for multiple sclerosis and muscular dystrophy. It was an old-time newsman named Winchell who originated and now plays mother hen to the burgeoning Damon Runyon Cancer Fund.

It is evident that the skyrocketing cost of broadening medical research has required and will require more and more support from the public at large, with its potentially large volume of individually small contributions. Here too, the news media will continue to play their key role of getting information from where the need is to where the money is.

There is a third field in which my own business, radio and television, is increasingly lending medicine a hand. This is in the matter, surprisingly, of equipment.

I have watched with great interest in my trade journals, as doctors must have in theirs, the startling entry of television into the medical field. Eleven years ago, in February, 1947, a "blue baby" operation was televised for more than 300 physicians and nurses at Johns Hopkins Hospital. Some such technique was even then overdue, what with the ever widening cluster of consultants, specialists, sterile nurses, circulating nurses, and other functionaries obscuring the view of the operating table. Galleries overlooking the operating theaters were fast becoming useless as a means of instruction until the TV camera—the sterile TV camera—came on the scene. But once that ungainly machine rolled into the operating room, the potential audience for an operation became literally limitless—and each viewer watched from just a few inches above the incision.

Since that Johns Hopkins experiment, two even more striking developments, one in technique and one in application, have grown out of operating-room television. Color video made its first medical appearance in 1949, years before it became available to the general public. And color TV in turn led to a procedure which may strike doctors now as commonplace but which still utterly amazes me. On Jan. 19, 1955, an operation in Philadelphia was transmitted via color television to more than 150 doctors at sets in Baltimore and Washington. A magnified image of a tissue specimen, removed within the instant, was shown on the screens, and a Baltimore pathologist gave his diagnosis. The observers in all three cities discussed his finding and confirmed it, and the operation was completed on the basis of their historic examination. One doctor said, correctly I think, "It was like bringing 150 specialists right into the operating room."

This operating-room use of television is the one that really catches the nonprofessional imagination, but it certainly doesn't begin to exhaust the possibilities—or even the actualities. Ultraviolet-sensitive TV is being used in cancer research for comparison studies between normal and malignant tissue. There is talk of using closed-circuit video to supervise entire hospital wards (yes, I think so too, but let's leave Big Brother out of the discussion for the moment).

One rather heart-warming application of medical TV crops up in the Morristown, N. J., hospital, where children too young to be admitted on the wards can "visit" with confined parents over a special video rig.

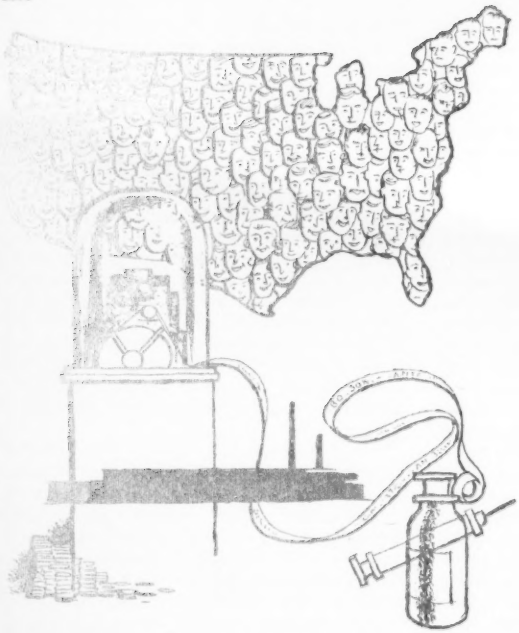
Dr. DeForest's remarkable electron tube itself has proved almost as much a boon to doctors as it has to us newsmen—and it's supporting a great many of us. Consider the electron microscope, x-ray systems, the television microscope, and a whole laboratory full of such measuring devices as the radiation meter and the electrocardiograph. Certainly the world of the future is an electronic one, and we're happy to have you aboard this speedy little particle of ours.

Now, I was asked to write a piece on the benefits that news confers on the world of medicine. I cannot end, however, without fervently thanking the medical profession for the one triumph without which the news business as I know it could not exist. Newsmen, of course, have trekked into the most toxic jungles with impunity, shot full of quinacrine (Atabrine). We've wriggled casually across the rusted barbed wire of a hundred war fronts, our blood streams aswarm with invincible tetanus antibodies. We've talked our way through fire, flood, invasion, whatever the Four Horsemen could throw at us, protected only by a press card, an assured manner, and the miracles of modern medicine. But none of this is what I'm talking about.

The triumph I refer to is a miracle drug in the finest sense of the phrase. On its timely appearance in 1899 the entire towering structure of news today depends. Without it the news fraternity would long since have distributed itself in about equal numbers among the less expensive sanitariums, the foreign legion, and the grave.

I mean, of course, aspirin.

John Daly, Vice-President in charge of News, Special Events, Sports, and Public Affairs, American Broadcasting Company



Business and Economics

James E Day

It seems particularly appropriate that I be asked to contribute an article on the 75th anniversary of THE JOURNAL, inasmuch as the Midwest Stock Exchange has just completed a similar celebration. The doors of the Chicago Stock Exchange, a forerunner of Midwest, were first opened on March 21, 1882. As a result, the year 1957 was our diamond anniversary.

Although in entirely different fields, I think the medical profession and the investment business have much in common. Neither activity enjoyed or merited public acceptance until it raised its own standards and saw to it that they were applied uniformly.

The readers of THE JOURNAL are well aware of the Flexner report in 1910 and how it brought order to medical schools and ultimately to the medical profession. For a good many years now, the securities business has similarly had the confidence of the American people, largely because the development of organized markets and orderly market procedures has convinced the public that anyone can buy or sell his securities with assurance.

Although the handling of securities for customers does not require a degree from an accredited school, as is true in medicine, our people must pass a creditable examination and be registered in the state in which they are located.

One of the most significant historical sites in the country is located not too far from my original home in Cuba, Ill. I am referring to New Salem, the restored village where Abraham Lincoln lived and worked from 1831 to 1837. It does indeed provide a picture of considerable economic importance. It also is a key point of departure for medicine.

There are countless examples of the intelligence and ingenuity of the people who lived in New Salem and elsewhere throughout the world in 1837. In the medical field, brilliant men and women had already discovered or developed vaccine, chloroform, food preservation, the stethoscope, and the thermometer. In business, men had successfully solved many major production and transportation problems by the invention of the cotton gin, the steam engine, the harvester, the locomotive, the plow, and the sewing machine, to name only a few.

Yet even the most casual visitor to New Salem, it seems to me, cannot help but be impressed by the distance we in the United States, as a nation, have traveled in the 125 years since that era. Certainly it was not lack of brainpower that made the civilization of New Salem in 1837 appear so primitive. Instead, I submit that it was lack of materials. The creativity was there, but we were deficient in the tools. (And let me say parenthetically that civilization in 1958 will appear in a very large measure deficient on many fronts when it is spotlighted in 2058.)

What I want to communicate to readers is that human needs are many, numerous, and pressing but that they will not be met until enough capital is accumulated and earmarked to permit the creation, development, advancement, and exploitation of new products or services.

There are countless examples to demonstrate this. If any reader has had time or inclination for what might be termed "casual reading," I'm sure he or she will recognize the importance to the expansion of the economy of such major developments as the automobile, airplane, radio, television, advertising, the telephone, construction, food stores, department stores, and various means of transportation. All of these successes were adequately capitalized eventually.

It has often been said that America, as we know it today, has been built on the skeletons of early failures. Certainly this has been true in the automobile industry. Pause a moment to consider the economic significance of the following startling fact. There have been over 2,000 makes of automobiles on the American market since the motor car was invented less than 70 years ago. Yet today there are only about a dozen remaining!

What happened to the remainder? They all lost their identities as a result of merger, purchase, consolidation, or going out of business. Many reasons are cited for this failure to survive. It is safe to say, however, that most of them can be attributed to lack of adequate capital. In many cases, this took the form of insufficient staying power while knotty production and distribution problems were being solved.

Very much the same pattern of growth and development took place while the radio industry was getting on its feet—and, later on, the television industry. Companies rose and fell as pioneering businessmen formed organizations to produce and market sets. In both industries, every successful company now established is, without exception, one that has been conservatively capitalized.

This matter of capital is the key to the entire economy of the United States. There are many needs yet to be met, but until we have available the kind of capital in sufficient quantities to "get the show on the road," so to speak, the answers to these needs will not be developed.

Right at this moment, more than 2 million patents have been granted by the U. S. Patent Office, but only a small fraction of these are actually produced commercially. Why? Those who have capital have not yet been convinced that they should be financial backers of the entire process of getting these products from the drawing boards to the general public.

Consider for a moment, if you will, the problem of adequate water supply in the United States. Practically every authority in the country who has spoken out on the subject is in agreement that the problem is a serious—perhaps even a critical—one. The water tables are at their lowest levels in many years, and apparently water requirements are so insatiable that the tables are not likely to be restored by natural means alone. Furthermore, the national consumption of water is rising so fast that the U. S. Department of Commerce estimates that, by 1975, daily use will be up to 453 billion gallons, a 73% increase over 1955.

What is being done to alleviate this situation? Well, for one thing, efforts are being made to conserve water—reductions in leakage, reuse of water, treating contaminated water, and other steps. But the logical and most obvious thing to do is to convert sea water to fresh.

This process has been known for many years. The U. S. Navy has developed equipment for emergency use which can convert salt water into fresh. But the operation is far too expensive at this stage to use universally.

One or two companies are now turning out daily batches of converted sea water, but again the cost is very high. These companies are staking their own capital on the chance that they will be leaders when this relatively new industry really gets going. It will eventually, of course, but the path to success will continue to be rough for a long time to come.

Yet some of the fortunes which will be in existence in 10 to 20 years will be the result of shrewd, far-sighted investments made now in companies which will provide materials and equipment to the water conversion industry. This will be the lot of the capitalist, undoubtedly.

Closer to the field of medicine are the drug companies. Although a number of drugs in use today, such as morphine and digitalis, were known at the time THE JOURNAL was launched

in 1883, it is my understanding that concerted advances in drug development did not come about until companies willing to base their products in extensive research were organized. Hundreds of millions of dollars risked by leading drug companies have resulted in recent years in the sulfonamides, antihistamines, hormones, and penicillin. In the last 50 years, thanks to new discoveries in many specific areas, 21 years have been added to the life span of the average American. Most of this, of course, has been due to a reduction in infant mortality, but substantial credit is also given to superior medication for people of all ages.

What has been the influence of these developments on American business? More consumers for all goods and services have resulted, and there will be even more to come. (The population, now close to 175 million, is growing at a rate of 3 million people a year.)

One last illustration comes from probably the most exciting field that lies ahead of us today. Current meetings of scientists all over the country are beginning to receive factual progress reports on the peace-time uses of atomic energy. Several hundred millions of dollars are being conserved annually because industry now has available radioactive substances for use in creating new products, improving old ones, and

making possible more precise measurement and manufacturing processes. But the companies basing some or much of their operations on the development of atomic energy for their own use found that this phase of their activities is usually a losing proposition.

A leading atomic consultant is an authority for the statement that companies using atomic energy which have not had to put too much into research were, all told, probably as much as 400 to 500 million dollars ahead in profits in 1957. By 1960, this figure might be as high as one billion dollars. But the road has been pretty rocky for those entering the power field. The Atomic Energy Commission recently stated, "Some readjustment was going on in that part of the atomic energy industry concerned with civilian power reactors. Some firms dropped out or reduced their undertakings."

So far, relatively little return has been the rule for stockholders who have sought to put their capital to work in the field of atomic energy. But if those now in the field are joined by others willing to risk capital, the rewards will eventually be tremendous.

Basically, then, the pace and degree of growth and development in the economy of the United States is determined by the amount and kind of capital available. As I have attempted to demonstrate earlier, the opportunities are enormous for risk capital and the returns can be handsome.

There are also many opportunities for income capital, where dividends can be substantial with relative safety of principal. Many highly successful companies, soundly established in their fields, are continually on the lookout for additional funds to obtain new plant and equipment or to market new products. These companies often have long records of consistent dividend payments and offer additional shares to the public as a natural result of their need for expansion.

Where does the capital come from? Fundamentally, it is the excess of what we produce or have the capacity to produce over what we consume. We can obtain capital from the extra we have already accumulated or we can mortgage our future output by obtaining capital on credit. But, over the long run, it must rise out of production.

That democratic nation is soundest that has the greatest percentage of its citizens solvent, employed, and comfortably situated. And it is from these people, for the most part, that the capital will stem which will serve as a base for further expansion. It is the primary function of the securities business to bring this about.

At the Midwest Stock Exchange, a great ground swell of interest in the fundamentals of investing on the part of the general public has been witnessed. Recent surveys have indicated that the number of public stockholders of American corporations has been increasing by leaps and bounds since World War II. There are now close to 10 million stockholders, or approximately 1 out of every 10 adults.

There will be more, as individuals recognize that they can help to protect themselves against inflationary forces in the economic cycle by investing their surplus funds wisely in sound common stocks. Those who can afford to do so may consider their funds risk capital and thereby seek the returns this kind of endorsement may bring.

Thirty years ago, 70% or more of the total stock market volume in the country originated with professional traders on the nation's exchanges. This meant that the public was responsible for less than 30% of the volume. Today, the nation's organized exchanges are truly public market places, since more than 85% of the volume arises out of the transactions of individuals. This is a record of which all those engaged in the securities business are proud.

Although we are all keenly conscious of our shortcomings as a nation, I'm a great one for counting my blessings. I can't help feeling pride in the growth and progress the United States has recorded in the last 75 years in such fields as transportation, education, construction, religion, health, and medicine. Perhaps those in other fields believe that the record of business and finance is noteworthy as well.

James E. Day
President of the Midwest Stock Exchange

Film Entertainment and Community Life

Walt Disney

In behalf of our branch of show business, may I respectfully offer congratulations to the American Medical Association on the 75th Anniversary of THE JOURNAL for its fine contribution to the national welfare.

The motion picture industry feels a particularly close kinship with the medical profession in that we too seek to serve the country's well-being.

We do it with prescriptions for pleasure. Mass entertainment, we believe, is a vital public necessity—as important as food, shelter, and a job. The tonic effect of fun and play has long been recognized as an antidote to the stresses, worries, labors, and responsibilities of our workaday life.

The history of our days from nickelodeon to the verge of the space age is considerably less than the A. M. A.'s life span. My own experiences in Hollywood go back 35 years. During that time I have watched the motion picture develop from a mystifying trick—an amusing plaything first known as "the flickers"—to a great art-craft showing daily in thousands of theaters in every city and hamlet in the United States and in thousands more abroad.

In some degree it has conditioned the lives of countless millions around the globe. It has set

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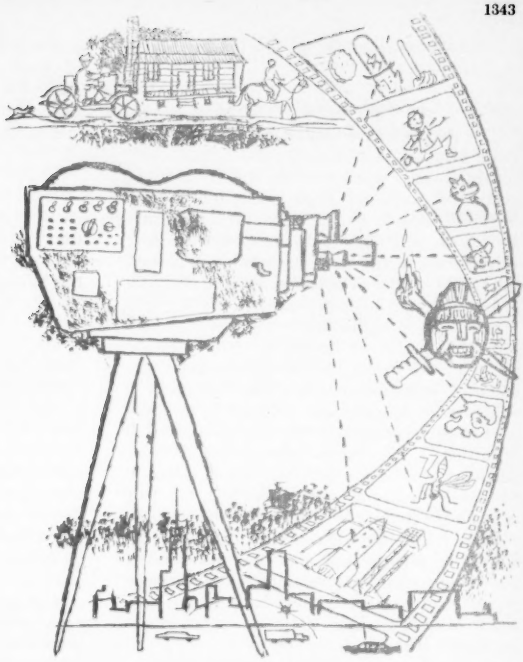

styles of behavior, standards of beauty, romantic ideals, and admirable goals of aspiration. Mechanically, the motion picture has become one of the marvels of all time, a true Wonder of the World in its magical powers. But what it has wrought on the screen for every man and his family to see and ponder has been even more wonderful.

In its progression during the past few decades, the film industry has, in a way, paralleled the pattern of medical practice during the same period. Just as circumstances forced the successor of the venerable country doctor from his house calls to the cities with their hospitals and clinics, so the pioneer showman with his small theater on Main Street had to give way to the big-time operators with their plush palaces of the new Rialtos, the Roxies, the Music Halls, the Pantages, the Chinese, where masses of people could be accommodated. The flickers became respectable. They no longer relied merely on amazement. They were being accepted as a people's theater and a popular art.

Dedicated to Laughter

In its early heyday the motion picture screen was mainly dedicated to comedy—broad slapstick which everyone could recognize as true American humor. It derived mainly from the school of newspaper comic cartoons and strips. Here and there it had shadings of satirical mockery, poking fun in good democratic freedom at men and things.

This was the era of the great comics bred to the cinema—Chaplin, Lloyd, Keaton, the Mack Sennett jesters, and others whose like are seen no more. In those days "entertainment" was bounded and defined by the number of laughs it could garner.

But soon, in its swift expansion, the screen added more dignified material to the slapstick and pathetic buffoonery. While the kings of comedy still held their place, the movies adopted "culture." Players were recruited from the stage. Popular authors were hired to adapt their own books and the old classics. This in turn brought on a great increase in book reading and presold

audiences. Attendance at film theaters skyrocketed.

Glorification of Personalities

The star system, with its fabulous paychecks, came into full flower. Glamorous female personalities were "discovered" by studio heads and acclaimed as queens. Their glorification rose to incredible degree. Fan clubs swarmed. Favorites were hysterically mobbed. These were the early ways in which the most remarkable impact in the whole history of mass entertainment began to take hold of American families.

Advances in technology added color, sound (in 1928), and other dimensions to the enchantments of the cinematic arts. It was these mechanical items—sometimes called "magical"—which were of particular interest to my own producing company. We were engaged—and had been since my arrival in Hollywood in 1923—in making fantasies and fairytales which could be done only in cartoon animation. We, too, had contributed to the star system with the antics of a little fellow named Mickey Mouse. Techniques of photography and sound recording were of great interest to us. And our own camera experts and sound engineers have to this day never ceased in their efforts to improve the mechanics of the medium.

Film cycles have run fast, merging, overlapping. Each has to some extent reflected its times in human affairs and temper. In these cycles and themes the historical pageant of the films records its brief half century of existence.

There were the early clownings, the short comedies, the first attempts at telling a story, in one reel, merely to show the amazing facility of the picture-in-motion. Then more elaborate and pretentious two-reelers and longer features.

The suspenseful cliff-hanger serials. Dashing westerns—gun noisy, after the advent of sound. Rustic drama. Sentimental romantics—some simple, some "sophisticated." Historical pageants with their pomps and hordes of extras. The hard, shocking, battlefield realism of World War I. Flaming youth. The violence of the gangster era. The whodunits. Message pictures and topicals, covering more and more territory of American life. Musicals and escapist stuff. And, if I may be permitted—"Snow White and the Seven Dwarfs," to mark a new era in cartoon animation as the first full feature in this medium.

A Business and an Art

The recital of fashions in product from the early 1900's to the present day needs explanation. To comprehend our place and problems, the industry must be understood as a business—the business of wholesaling the merchandise of visual delights to millions. After our first

astounding experiences as individual showmen, we began to realize that our community of influence embraced the whole population, not just a local segment. We had to be all things to all men.

As an "industry" we were a lot of competing private enterprisers showing our offerings to the same audiences. A common product poured from the Hollywood studios annually in hundreds of short subjects and features. Motion pictures became a fixed habit of some 80 million Americans in some 20,000 theaters every week.

As patronage swelled to incredible figures, every neighborhood had its local theater and family attendance. Showmen who exhibited our product identified themselves with other groups and institutions of vital importance to the locality in the name of the whole industry.

One personal experience in close relationship with other major groups—in this case the medical profession and the public health service—occurred during World War II, when we were happily able to make films useful in fighting disease and the ignorance which has tolerated it. Distribution was through the Coordinator of Inter-American Affairs. These film educationals included methods to control malaria, dealt with precautions against polluted water, illustrated the attack of science on germ infection. Environmental sanitation, eating for good health, a definition of disease, and the functions of the human body were other areas of concern. They applied to our servicemen abroad and to certain South American and Central American populations.

The Challenge of the Space Age

Today we stand at the threshold of the space age. Now, once more, we must attempt to diagnose mass taste and preference in what may well be the most critical era for motion pictures. We must diagnose and prepare the prescription.

About one thing I feel certain. Tomorrow's show world will have to be more aware of our physical environment. Fascinating fact will vie with the most beguiling fantasy. Teen-aged seekers of diversion and those steeped in the sciences especially will expect a much broader definition of what the trade has always called "entertainment." The theater will have to compete with all the excitements and fascinations which science education will add to the humanities in real life.

Escapist fiction will have two channels—one into the past, another into the future. Enlightenment will be a staple alongside of amusement. We already have evidence of this in our own studio in the growing audience reception of our True-Life nature fact films and such science speculatives as "Man in Space," "Man and the Moon," "Mars and Beyond."

"Science Will Never Destroy Myth"

I do not mean to disparage the best in human drama, in myth and timeless fairytale, in stirring legend and heroic adventure. These will never be diminished. The human spirit needs them in every age. Spiritual health requires them. But our film programs, in theaters and on television, will unquestionably demand more balance, more discrimination, wider appeal and a broader common denominator.

Our own schedule for the next few years ahead will confidently complement a "Sleeping Beauty" and other sheer cartoon fantasies with more true wildlife dramas, factual reports of people and places, and live action human drama tied in with the newly disclosed marvels of the atomic and electronic age.

I believe implicitly that the motion picture still has great things ahead. Equipped with its big screens, its color and sound fidelities, and all its perfected devices for illusionment, nothing is beyond its range and powers.

Itself a marvel of science, it can and will serve with equal facility the space enthusiast looking beyond the sun and the homebody content with the warm familiar earth and all its bounties when he goes with his family seeking entertainment and inspiration.

Walt Disney
Executive Producer and Chairman
of the Board of Walt Disney Productions

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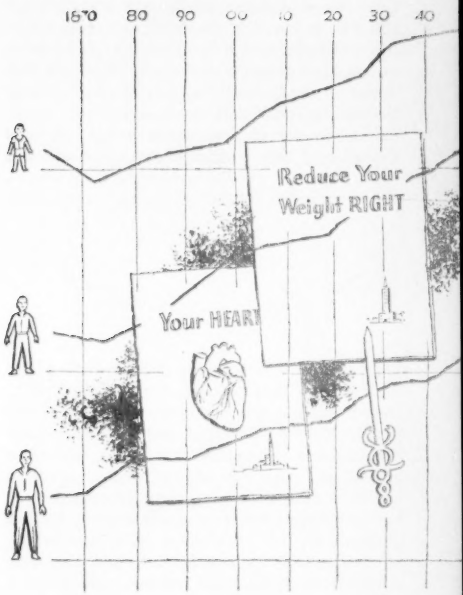
Chicago Letter.—Rush Medical College is about to build a hospital of its own on ground in close proximity to the college buildings. The hospital will be built so that it can be enlarged in the future. The college is undoubtedly led to make this move because of the many hinderances thrown in the way of clinical teaching in the County Hospital, by the County Commissioners. During the last two years or more, the students have not been allowed to enter the wards, and go to the bedside for instruction, but have been required to receive all clinical instruction in the amphitheater. . . . The New St. Luke's Hospital is fast nearing completion, and will be ready for occupancy in the course of a few months. This hospital has long needed enlargement. Its wards are always full to overflowing. The new building is expected to be one of the best planned hospitals in the country. They still have as much more ground as is now used, on which they can build in the future. This hospital will furnish much additional clinical material for the students of the Chicago Medical College. The hospital is only a few blocks from the college, and three of its staff are professors in that institution. The Chicago Medical College is now peculiarly well supplied with clinical material, for in addition to St. Luke's Hospital, it still has the use of the material in Mercy Hospital . . . on the same grounds with the college. Mercy Hospital accommodates between two and three hundred patients. Some four or five blocks off there is also the Michael Reese Hospital, in which occasional private clinics are held.—Correspondence, THE JOURNAL, vol. 1, July 28, 1883, page 90.

Life Insurance and the Medical

J. W. Cher

Profession



It is a pleasure for me to congratulate THE JOURNAL of the American Medical Association on its 75th anniversary and, through its pages, to send my greetings to all those who, over the years, have done so much to advance the cause of good health. I am particularly happy to have been given the opportunity of contributing this article to THE JOURNAL. Those of us in the life insurance business are especially proud of our close relationship with the medical profession. This pride is accompanied by deep admiration and respect for our doctors and their good works. It is natural that we should get along well together, for so much in life insurance vitally depends upon doctors, upon their opinions, and upon the services they render.

The passage of three-quarters of a century has brought with it phenomenal growth and dramatic change in medicine and in life insurance. No large group in our country stands alone; the advances in services, in methods, and in knowledge in the fields of medicine and life insurance have served to bind them closer together and to help each in its endeavor to break through to the new frontiers which constantly appear upon the horizon.

Basically, many of the objectives and beliefs of both of our groups are the same: Both seek to prevent disease and to prolong life; both assert that individual worth and dignity are important; both foster the security of the person in body and spirit; and both are strong in their support of individual initiative, self-reliance, and the value of proper incentives and hard work. Many in both groups would probably agree that their welfare, and that of the American people as a whole, could best be served by less, rather than by more, government in their daily personal and vocational lives.

National Health in 1883

The health picture when THE JOURNAL was founded was vastly different from that of today.

Many diseases, now well under control, were then serious problems. Children's diseases were rife; outbreaks of smallpox, yellow fever, and cholera were common; in 1881 in New York City the diphtheria death rate was 265 per 100,000, and in 1882 the death rate from scarlet fever was about 150; in 1883 the typhoid death rate in Massachusetts was nearly 50 per 100,000. Today in the United States, fatal cases of these diseases are practically nonexistent.

Malaria was so common in certain parts of the country that insurance companies charged

higher rates to those living in areas with a high incidence of that disease. Perhaps this led to the conclusion expressed in the Insurance World of March, 1883: "The great city, especially since the increase in sanitary knowledge, has many advantages over the country with respect to health. It has a crowded population, it is true, but its comparatively confined air may be less injurious to the inhabitants than that which sweeps over the open country, where it may waft poison from swamps and marshes, and where a scientific system of sewerage and drainage is hardly practicable." Today, of course, malaria rarely occurs in the United States.

The leading cause of death in the early 1880's was tuberculosis, then called consumption, with rates exceeding 300 per 100,000. While the current rate is only 8 per 100,000, it was then considered a disease which medical skill could only modify but not cure. It was reported in 1882 that Dr. Robert Koch of Berlin University had concluded, after long research, that consumption was "a transmissable disease and contagious, and not inheritable excepting so far as transmitting from parent to children of a weakened organism wherein the conditions are favorable to the propagation of the parasite."

Pneumonia, too, ranked high among the killing diseases of the early 1880's, with rates of about 200, as against a current rate of only 32, per 100,000.

It is hard to realize that the combined death rates of tuberculosis and pneumonia alone in the early 1880's closely approach the current death rate of policyholders of ordinary life insurance from all causes.

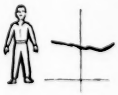
Another difficult problem of the period had to do with the risk of childbearing. This risk was so great that the mortality of women in childbearing ages was higher than that of men. While the actual rate of maternal mortality at that time is unknown, as late as 1915 it was over 60 per 10,000 live births. Today it is only 4 per 10,000 live births.

The medical profession and the research scientists, of course, deserve the credit for the improvements in health conditions. Nevertheless, the life insurance companies of the country also have made contributions to the improvement in mortality over the last 75 years. A few examples may serve to emphasize some of the bonds we have in common.

Health, Statistics, and the Life Insurance Business

Since mortality is one of the basic elements in the cost of life insurance, the business has had an obligation to expend time and money in health conservation measures. The very existence of life insurance brings to a man's mind the need to take health precautions; sometimes the life insurance medical examination itself brings to him his first knowledge of an impairment in its early stages and at a time when effective counter measures can be taken.

In its early days, the life insurance business found a great dearth of accurate mortality and morbidity statistics; such statistics were essential to the conduct of the business. Conse-



quently, life insurance played a major role in many early efforts to improve the nation's vital statistics. As late as 1911, satisfactory data on births and deaths were unobtainable in large sections of the United States. In cooperation with organized medicine, the life insurance companies worked with legislatures and with local authorities so that today every state has machinery for reporting and tabulating such records.

Insurance representatives have served on the committee charged with the periodic revision

of the International List of Causes of Death—and a lasting byproduct has been a vast improvement in the quality of mortality statistics. In pioneering efforts, life insurance companies have enlisted the cooperation of their agents in many localities in sickness surveys in attempts to secure better morbidity statistics—so important in assessing health problems and in providing essential information for health insurance.

Most large companies have also carried out investigations in mortality experience among different classes of insured lives and among their own employees. Such studies have included life expectancy after acute coronary occlusion and studies of vascular and hypertensive heart diseases.

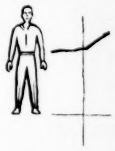
On several occasions since 1900, the insurance companies have pooled their experience in joint studies of mortality, body build, blood pressure, and various other factors in medical impairments. The studies of build and blood pressure were especially significant in that they brought to light such important facts as the adverse effects of overweight and moderately high blood pressure on health and longevity. The height-weight standards in common use today are a byproduct of these studies. Such studies are unique in that they usually deal with relatively large numbers of people who have been automatically traced over long periods of time by means of their insurance records.

Another example is the Impairment Study of 1951, made under the auspices of the Society of Actuaries in consultation with the Association of Life Insurance Medical Directors. This study investigated the experience of some 625,000 ordinary insurance policyholders in 132 groups of medical impairments, including diseases of the heart and the circulatory system, asthma, chronic bronchitis, tuberculosis, gallbladder disease, gastric and duodenal ulcers, thyroid disorders, phlebitis, and others.

The valuable statistics which have resulted from these and other such efforts have been of inestimable help to the medical profession and to the cause of good health. Lives have been saved and longevity promoted because such statistics have pointed the finger of suspicion to areas in which, subsequently, medical research has been successfully brought to bear.

Medical Research and Medical Education

More than half of all deaths at all ages in the United States are due to diseases of the heart and arteries. Thirteen years ago almost 150 United States and Canadian life insurance companies organized the Life Insurance Medical Research Fund. This fund is supported by voluntary annual contributions made by member companies. Contributions from others are not solicited. To date, a total of over 10 million dollars has been granted by the fund to support widespread research programs in many established institutions in a major effort to conquer the dreaded ravages of today's number-one killer of our people. The fund has already helped in the development of research scientists; from some of the studies it has sponsored



have come new ways of treating heart disease and new knowledge of how the heart and arteries work.

The life insurance companies have also contributed financially and in other ways to medical research, health, and safety activities and to medical education. Among the organizations which receive support from life insurance companies are laboratories and clinics for research teaching in cardiovascular diseases, cancer, and other diseases, and also the American Heart Association, the National Tuberculosis Association, the American Medical Education Foundation, the National Fund for Medical Education, the National Mental Health Association, the National Foundation for Infantile Paralysis, the Arthritis and Rheumatism Foundation, the National Safety Council, and others.

Life Insurance and Medicine Work Together

Health education of the general public is of vital concern to the medical profession and to the life insurance business. Just as the American Medical Association itself, through its Bureau of Health Education, brings health messages to the general public by means of booklets, radio and television broadcasts, speakers, school aids, and advertising, so life insurance companies, using the same media, provide similar types of popular, public education in health and safety matters.

In 1909, when tuberculosis was common in working class families, when infectious children's diseases were widespread, and when maternal mortality was high, the company with which I am associated stepped in to help solve these problems. Arrangements were made to provide industrial insurance policyholders with skilled home nursing. When community public health nursing services were available, they were utilized. In other localities nurses were

engaged on a salary basis. In addition to giving bedside care, the nurses became health instructors as well. Since the nurse worked only under a physician's orders, this was a means of bringing essential medical attention to the patient. Life insurance support greatly aided the growth of public health nursing both in Canada and in the United States. After 41 years of providing nursing visits to policyholders, it was generally agreed that the value of public health nursing had been established and that it was time for Metropolitan to direct its public health efforts to other areas.

Other public health demonstrations have been undertaken. For example, as far back as 1916, the Metropolitan Life Insurance Company, in cooperation with the National Tuberculosis Association, initiated and financed a demonstration at Framingham, Mass., to show the methods by which tuberculosis could be eliminated. The work included periodic health examinations, a search for means of adequate treatments, and health work among infants, in schools, and in factories. After seven years, the tuberculosis death rate in Framingham was reduced 68%. There were also decreases in infant mortality and in the general death rate. This demonstration clearly showed the proper method for effective control of this dreadful and once widely prevalent disease.

Life insurance companies and the medical profession also have close financial bonds. According to a study made in 1951 by Dr. Ralph M. Filson, medical director of the Travelers Insurance Company, insurance companies paid 358 million dollars that year to practicing physicians. Of this amount, 16 million dollars was paid directly for examinations or reports. Payments of physicians' charges to policyholders having group surgical and medical policies were 160 million dollars and to those having individual surgical and medical policies 55 million dollars. Another 7 million dollars for physicians' charges was paid to policyholders having blanket reimbursement under personal accident policies and to those having infantile paralysis or poliomyelitis policies. These plans, written by private insurance companies, give the patient complete freedom to select his own physician; they preserve the physician-patient relationships so essential to the satisfactory practice of medicine. (In addition, payments of doctors' charges under workmen's compensation amounted to 111 million dollars and under automobile accidental injury policies 9 million dollars.)

The past 75 years have seen tremendous changes in the health and in the chances of survivorship of the American people. So high was the mortality in infancy and early childhood 75 years ago that only three-fourths of all the babies born lived to their fourth birthday. If the death rates experienced in the early 1880's had continued to prevail, only one-half would have attained the age of 48. In contrast, under current conditions, three-fourths of the babies born will survive to the age of 62, one-half will still be alive at the age of 73, and one-fourth will reach the age of 82, even though there is no further improvement in mortality. Today in the United States the expectation of life at birth is about 69½ years, or 27 years more than in the early 1880's, when it was about 42½ years.

The impact of the great improvement in national health is shown in many ways, but of particular importance is the decline in the frequency of orphanhood. In the 1880's the risk of children being deprived of at least one parent during their years of dependency was very much greater than it is today.

The next task, and one to which both the medical profession and the life insurance business are giving increasing attention, is the study of chronic and degenerative diseases which attack the growing number of older people.

Progress and Growth

Since 1883, the progress and the growth of THE JOURNAL have paralleled the progress and

the growth of the medical profession itself. Life insurance has also made great progress, but the increase in voluntary health, hospitalization, and medical care insurance in recent years has been most dramatic.

At the end of 1956, about 118 million people in the United States (70%) owned some form of life insurance, and about 106 million (63%) were insured for 412.6 billion dollars with legal reserve life insurance companies. Eighty-six per cent of the families had some life insurance protection. Many of these policies provided benefits for certain disabilities.

At the end of 1957, the number of persons estimated to have some protection against hospital expense was 123 million—probably more than the number covered by life insurance on that date. A year earlier, the figure was 116 million, but in 1940 only about 12 million were so protected. With some duplication, in 1956, 101 million were covered by surgical expense insurance (only 3 million in 1940) and 33 million were insured against loss of income resulting from sickness or accident. All of these persons are protected by private plans, furnished by private American enterprise.

In view of the great number of persons covered by these forms of insurance and particularly in view of the rapid rate of growth, there would seem to be little justification for a revival of plans for government to enter these fields. If that should come to pass, the socialization of medicine might well follow. We have only to look at England, or at Ontario, Canada, to see what could happen here. On Jan. 1, 1959, residents of Ontario will be covered by a compulsory plan of hospital care insurance. If they want ward care, they must get it under the government plan and not through the private insurance companies; these are to be limited to providing insurance covering the difference between ward care and private or semiprivate accommodations and certain other benefits. Surely the medical profession shares with the life insurance business the desire and, indeed, the duty to do all that is reasonably possible to prevent this sort of governmental expansion and interference; it could lead to government control of insurance and medicine.

In the future, as in the past, the medical profession and the life insurance business will continue to be closely allied; both will continue along the paths of dedicated service to the American people.

The progress and the accomplishments of the medical profession during the past three-quarters of a century are reflected in the progress and the accomplishments of THE JOURNAL of the American Medical Association. The passage of the years may dim our eyes to past events, but it cannot take from the THE JOURNAL the solid virtues of its accomplishments as it speaks for the medical profession throughout America and the world.

As THE JOURNAL faces the future, I join with its many friends in the hope and confident expectation that the future will bring to it and to the physicians it serves success in all their endeavors and Godspeed as they continue their great contributions to the welfare of their fellowmen.

Frederic W. Ecker
President of the Metropolitan
Life Insurance Company

Medicine and Education

Harlan Hatcher

If one were to prepare a graph to illustrate the rise and fall in the fortunes of medicine and education in the United States since colonial times, he would find that the lines representing each could almost be superimposed, so similarly have these fields fared.

From the time that "Dr. Lambert Wilson, chirurgeon" taught the first medical students at Massachusetts Bay Colony, in 1639, until the modern debate over the role of the humanities in the education of all citizens, there have been noteworthy parallels between medicine and general education.

This is not unnatural, for the success of an educational program can be measured by its products and their accomplishments. Abraham Flexner wrote in 1925 that "medical education cannot be described or discussed apart from general education. The maturity, previous training, and intellectual competency of the student body determine in advance the scope, quality, method, aims and outcome of the instruction offered by the medical faculty." It has even been argued that the strength and prestige of the medical profession through the years have been directly related to liberal content of the premedical programs.

Then, too, the ebb and flow of social, economic, and political forces during the history of the United States have affected both fields in similar ways.

Both education and medicine were largely dependent upon European achievements in the early colonial period. The apprenticeship system, with all its virtues and shortcomings, came from England. As the deficiencies of the system became recognized, the more ambitious students returned to Edinburgh, London, Paris, or Leyden for their medical training. It is interesting to note that the "deficiencies" may well have included lack of breadth, a problem with which educators still struggle today. The apprenticeship system served the colonies well during the 17th and 18th centuries, but the real advances in medicine came from abroad. "European-educated physicians had a certain knowledge that the apprenticed men were lacking," one observer noted.

Several excellent educational institutions were established in this era, and they have since grown into some of the ranking schools of the world. However, during this stage of their growth they were very frail and, for the most part, not very consequential institutions. They were classical, theological, and primarily for those who could afford them. The new nation was not to approach its educational potential for many decades after its creation.

As the United States expanded during the 1800's, medicine and education alike suffered acute growing pains. The outline of the continent was sketched in from coast to coast. The population curve was rising. There was a job to be done, and America was impatient to get on with it. Plato, Sophocles, Shakespeare, Spenser, Milton, Herodotus, and Gibbon obviously were of little value to people tilling a hemisphere and extracting its resources. Besides, this distinguished company was not for the common man —and they would take up valuable time. The physical sciences, applied to America's needs and developed into vocational techniques, seemed to be the answer. Like the camel in the parable, they put their nose in the tent, and the humanistic pilgrim was soon out in the desert.

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The early medical schools, which had established standards and programs as rigorous as those in European universities, also gave way under the pressure of this materialistic philosophy. The growing nation required doctors, so the requirements for the M.D. degree sagged. Medical schools sprang up independent of the universities. In many cases they were financed entirely by tuition and tended to become commercial enterprises. The quality of instruction varied; scholarly ideals were compromised and forgotten. One hundred years were to pass before the profession fully recovered.

The noxious proprietary schools mushroomed in answer to the demand for physicians. In 1800, there were four medical schools in the country; in 1860, there were 66; at the end of the 1800's there were 160. In little more than a century, the United States and Canada gave birth to 457 proprietary schools, most of which were short-lived.

"No applicant for instruction who could pay his fee or sign his note was turned down" for admission to these schools, Flexner said in his historic report. "The man who had settled his tuition bill was thus practically assured of his degree, whether he had regularly attended lectures or not. The school diploma itself was a license to practice."

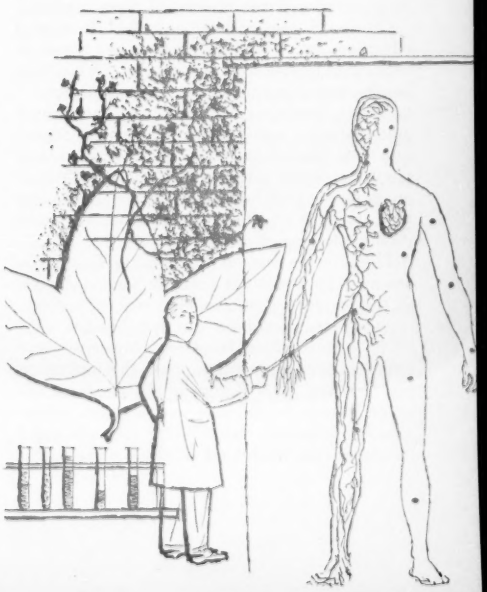
It comes as no surprise that there was little if any room for college preparation in these brief programs, much less for those who had concentrated on the humanities. Medicine was taught as an art rather than as a science.

"A college education is one of the luxuries of life, never a necessity," one man wrote. "The only way to learn about disease is to take care of sick people," another observed.

And so the nation grew, with emphasis on the three R's and on the mass production of men ostensibly capable of reducing fevers, mending broken bones, and treating wounds.

To be sure, there were voices of protest. Thomas Jefferson, that amazing American with a restless and omnivorous mind and with unsurpassed vision and understanding, was among the first to point out the inadequacies and handicaps of the nation's cultural dependency upon Europe. He counted the establishment of the University of Virginia as his proudest moment.

A stronger voice was that of Ralph Waldo Emerson, who sounded his "Intellectual Dec-



laration of Independence" in 1837. "Perhaps the time is already come when . . . the sluggard intellect of this continent will look from under its iron lids, and fill the postponed expectations of the world with something better than the exertions of mechanical skill. Our day of dependence, our long apprenticeship to the learning of other lands, draws to a close. The millions around us that are rushing into life cannot always be fed with the sere remains of foreign harvests."

There were two important points in this statement. The first was that it was America's responsibility to make its own contribution to the fund of knowledge through scholarship. The second was the challenge for Americans not to be content with manipulative skills, not to be merchants and farmers and accountants, but to be informed and cultivated men and women who are also good mechanics, farmers, and accountants.

In the medical profession, other voices were heard. In 1847, the American Medical Association was founded to raise the standards of medical education on all fronts. Licensure requirements, abandoned for many decades, were reinstated. At my own university, the president reported, in 1874, "An examination for admission was held [for students entering medicine]. Though the requirements were very slight, it was found necessary to reject some of the applicants, whose ignorance was profound." In 1875, "more than a dozen rejections" were reported.

Others in the profession looked to liberal education for premedical students as a means of improving the prestige of medicine, of facilitating its study, and of improving its practice.

"Every preceptor and professor knows how much better a young man with a liberal education can pursue his studies," a Pennsylvania physician wrote late in 1870, "and with how much more credit he will pass his final examination, than the uneducated and untrained, other things being equalled."

These voices were not as loud as Emerson's, however, so it was not until the second decade of this century that medicine was to recover.

As it was, Emerson was not heeded until 1876, when Johns Hopkins University was founded. Breaking with the past, this institution was the first with European standards of advanced study in the arts and sciences. Other schools followed suit. With the advanced standards came increased emphasis on research; instead of passing along knowledge gained in Europe, American scholars began creating it.

Here we find the curve of general education swinging upward much earlier than that of medicine. The lag may be attributed largely to the fact that medical schools had sprung up independently of the universities and that even medical colleges of the universities were virtually separated from the parent institutions.

"Before that [the founding of an independent proprietary school in Baltimore early in the 18th century] a college of medicine had been a branch growing out of the living university trunk," Flexner wrote. "This organic connection guaranteed certain standards and ideals, modest enough at that time, but destined to a development which medical education could, as experience proved, ill afford to undergo. Even had the university relation been preserved, the precise requirements of the Philadelphia College [University of Pennsylvania] would not indeed have been permanently tenable. The rapid expansion of the country, with the inevitable decay of the apprentice system in consequence, must necessarily have lowered the terms of entrance upon the study. But for a time only: the requirements of medical education would then have slowly risen with the general increase in our educational resources. Medical education would have been part of the entire movement instead of an exception to it."

Separated from the universities and concentrating upon the production of students, medical institutions failed to recognize for 50 years the full potential of the scientific discoveries which began to flow out of the laboratories of Europe and America in the 1800's.

Once medicine became aware of the power of science, however, it could not be accused of slighting it. In actuality, the reverse was true. Science became a religion to leading medical educators, and it tended to dominate medical training. It was only in the late 1920's that the humanities, arts, and social sciences won a significant place in the preparation of doctors. Some observers believe that medical education has become most effective since the introduction of the humanities and the lessening of the excessive emphasis on science and specialization.

Today, both medicine and education still suffer from the curse of practical demands. In medicine, scientific preparation still is heavily weighted; in general education, we provide the narrowest of training in a bewildering number of fields. There is the great danger that, in

attempting to meet a multitude of special demands, American education has overextended itself. We have diversified so widely, we have produced such refined and isolated technicians, so many vocabularies and departmental jargons, that we cannot even communicate between faculties.

Yet it is difficult to take issue with the towering technological success our nation has enjoyed. Such success carries its own justification, but it also contains the seeds of its own inadequacies. We have done so much so well, and with such comparative ease, that we have made a philosophy out of our materialistic triumphs. We made ourselves believe that if we could improve our living standards, shorten hours and raise wages, lighten or do away with physical toil, and stay in isolation between our oceans and away from the wars, we would automatically reach our goal of human happiness as envisioned in the Declaration of Independence.

All these things were worthy and needed to be achieved, but they failed to include the larger dimensions of man's capacity. For we are not bound solely to earth and time, and we cannot fulfill our destiny solely with material things, with techniques and goods. Something significant, perhaps the key to the whole adventure, escapes this process and leaves us short of our high hopes. We have attained no peace or quiet among our perfected machines.

It is not uncommon these days to hear those who have been trained almost exclusively in the vocational or more specialized fields speak of the warping and even frustrating effects that have resulted from this overemphasis or this omission.

In essence, the external and technical process by which we have achieved our lofty position in the world has tended to rob us of the wisdom, the judgment, the spiritual resources and calmness of soul without which we may not understand the nature of our testing or meet it in our grave hour with success.

The sweep of our history, the perspective of our own moment in history, the instruments which we have forged to integrate our mutual lives, the great moments of vision and truth experienced by our finest souls and reported to us through the magic of literature—these things are as vital to our happy survival as the technology of modern industry. We have ignored or neglected them.

The greater our progress toward our materialistic goals, the more insistent and disconcerting have become the forebodings about the completeness of the result. Harsh experience is thus teaching us what the prophets of old and the wiser of our forefathers knew full well: that happiness may not be pursued as a goal within itself, that man does not live by bread alone, that neither will he perish by bombs alone.

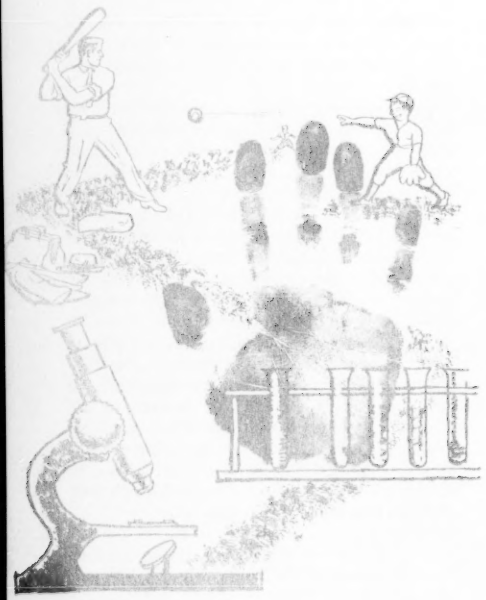
I have no doubt that education and medicine will answer the immediate problems which confront them. The solutions will not come easily, but they will come. The larger worry and the larger concern for higher education in the American system lies in this other dimension of which I have spoken: a richer and more humanistic training that will enable our students to understand that the sole end of their education is not the mere manipulation of the gadgets that go with modern civilization or modern warfare.

And so general education and medicine have traversed a long path together, affecting, and affected by, each other. It is my hope that these partners will in the future pay greater heed to these words of Emerson, despite the demands of the day: "We lie in the lap of immense intelligence, which makes us organs of its activity and receivers of its truth. . . . The lesson of life is to believe what the years and the centuries say against the hours; to resist the usurpation of particulars; to penetrate to their catholic sense."

It is that realm in our education and private contemplation with which we are not now sufficiently reckoning. But there are signs that we are beginning to learn of this mistake, to see where we have done well and where we have failed. This is essential if the oncoming generations are to exist harmoniously in the world which we have created for them and which they will have to manage and direct.

Harlan H. Hatcher
President of the University of Michigan

Progress for the Benefit of All



IN the eyes of the American people, the doctor occupies a position of unparalleled honor and respect. Not only does he represent relief from pain and illness, but, in the course of his duties, he frequently becomes a confessor, a comforter, a public conscience, and a hope for the future. In this respect, and in this respect alone, the medical profession remains unchanged today from the period when such doctors as William and Charles Mayo launched their careers of dedicated service to this country and its people.

Medicine traditionally has been a dynamic profession—one of continual progress. During our lifetime, the equipment and techniques of doctors have been ever improving. Doctors across the nation have seen the realm of the unknown and the "impossible" continually shrink under the weight of their enthusiastic determination. Feats which would have been termed "miracles" in the twilight years of the 19th century have become "merely part of a day's work" in the medical profession today.

It is a genuine tribute to America's doctors that in this country, where most people are inclined to take so many outstanding achievements for granted, the public has such a deep respect for the medical profession. Perhaps, however, our citizens have become so preoccupied with individual medical accomplishments that they have failed to recognize what I consider to be the greatest attribute of doctors across the land.

By his very nature, the doctor exerts a positive influence in his community. He meets each challenge promptly, energetically, and to the best of his ability. His personal and professional resources are available whenever and wherever the need exists. He often "drives" himself beyond the point of mere human endurance; yet, he invariably is able to summon the God-given energy which is necessary to continue when a less divinely motivated man would yield.

The doctor exemplifies the highest qualities of public service. Directly or indirectly, every American citizen owes his life to him. Each person in the United States today is the beneficiary of a vast pool of scientific knowledge and experience which has been amassed by the medical profession from the successes and failures of its members over the years. This fund of information grows every day, thereby enabling doctors across the nation to make increasingly greater contributions to the welfare of all.

During this century, we in law enforcement have adopted many of the personal standards and the determination to progressively improve which have long typified the medical profession. Many police departments which once were little more than political pawns have won their independence from the forces of graft and corruption. The "misfits" and the opportunists who formerly were all too common within the ranks of law enforcement have, with rare exception, been routed—their places taken by dedicated men whose primary ambition is to pursue a career of genuine public service.

Proper motivation is as essential in law enforcement as it is in the medical profession. However, by themselves, even the best of intentions are sorely inadequate. In addition to his personal desire, a man must have the physical and mental ability, the training, and the equipment which are necessary if he is to suc-

ceed either in medicine or in enforcement of the law.

Today, the educational backgrounds of law enforcement officers are higher than ever before. More likely than not, the officer received his appointment as a result of personal interviews and competitive examinations, and he will retain his position or earn a promotion solely on the basis of merit and ability.

Training programs, once scoffed at by veteran investigators who had developed their limited abilities through trial and error, now are available to officers throughout our profession. Modern law enforcement demands special skills which can be learned only through formal and continuing training programs. An entirely new concept of protecting the people against crime and subversion has arisen in which scientific procedures and technical equipment enable today's officer to accomplish far more than his forerunners dreamed possible.

In this century, the American people have witnessed a tremendous revolution within the law enforcement profession. The techniques and equipment in use throughout our profession today would make the officer of the early 1900's as outmoded as a tribal witch doctor in a modern medical center.

By adopting wherever possible the scientific approach which has been traditional with the medical profession, law enforcement has attained progressively greater heights of accomplishment. Since the recognition and practical adaptation of fingerprints as a means of positive identification approximately 50 years ago, America's investigative agencies have relied more and more heavily upon the sciences to assist in promoting the interests of justice.

Today, radar is used extensively to detect speeding violations and, thereby, to make the roads safer for all. Scientific tests to determine the alcoholic content of blood also are employed in traffic cases. The two-way radio and other electronic equipment play a vital role in the prevention and detection of crimes. X-ray machines, centrifuges, spectrophotometers, and other scientific instruments have become important weapons in America's fight against crime and subversion.

Since the FBI Laboratory conducts examinations of evidence in criminal cases for all authorized law enforcement agencies without charge, the increasing volume of its work reflects, in part, the growing importance of science in crime detection. During the 25 years of its existence, the Laboratory has gradually expanded, until today it uses substantially every field of science from anatomy to zoology to help identify the guilty and free the falsely accused. During the 1957 fiscal year, the Laboratory performed 160,643 examinations. These involved 134,683 specimens which were received in connection with 33,103 individual requests from federal, state, and local agencies.

The "scientific awakening" which has swept across the law enforcement profession during our generation has helped all investigative agencies to reach new peaks of efficiency, public service, and protection of individual freedoms. Innocent persons who have been falsely identified by victims and witnesses of crimes now are freed from suspicion through the use of scientific investigative techniques. Guilty persons who once would have escaped punishment are brought to justice because modern law enforcement has learned to use the sciences to promote the cause of decency.

Specific cases to support these statements can be cited by the score. In California today a man

is serving a life sentence for committing a double murder. He ruthlessly killed a young couple, leaving as the sole witness their 8-month-old baby. Yet, modern investigators who were trained in scientific crime detection apprehended the killer within a matter of hours. Unwittingly, when he fled, he left behind literally scores of items which pointed conclusively to his guilt.

In another case, an innocent man was arrested and charged with a crime. Two merchants had positively identified him as the person who had cashed fraudulent checks in their business establishments. The FBI Laboratory, however, proved that these merchants were in error. Not only did the Laboratory establish that the arrested man was free of guilt, but, on the basis of available handwriting specimens, it positively identified the criminal who actually had written the checks. This hoodlum was located. He confessed.

Accomplishments such as this were unheard of a few decades ago. Until the present century, science was not part of the regular equipment of America's investigative agencies.

Law enforcement and the medical profession are more closely allied now than ever before in terms of promoting the public welfare and exerting an influence for good within the community. Together, we subscribe to standards of service which are a challenge to those around us. Individually, our members have proved to be an example and an inspiration for the younger generation to follow.

We in law enforcement today are indebted to the medical profession. During this century of unparalleled progress, we have adopted not only the respect for science but also the personal determination and standards of service which traditionally have characterized the medical profession. I can think of no finer means of our expressing appreciation for these "borrowed" qualities than to use them as a doctor would—for the benefit of all.

John Edgar Hoover
Director of the
Federal Bureau of Investigation
United States Department of Justice

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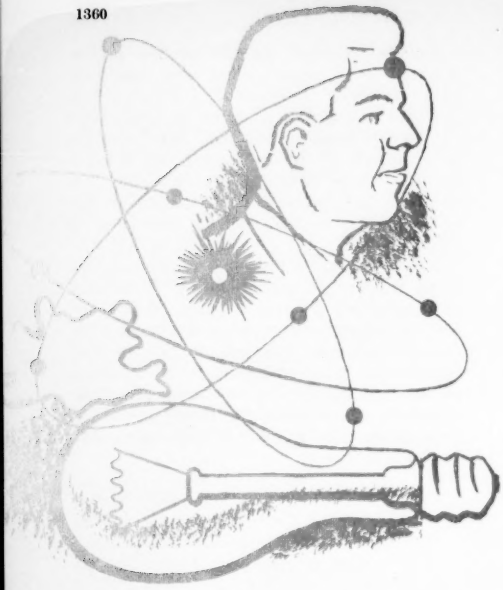
Report on Laws Regulating the Practice of Medicine in the United States and Canada.—The progress made in the legislative restriction of medical practice in the United States since your Committee was appointed, three years ago, to report upon the subject, has been both notable and salutary. At that time the propriety of establishing such laws was under active discussion, and weak enactments, temporizing in character and but partially effective in their action, were evoked from tardy and timorous legislators in several of the States of this country, as compromises between a sense of the necessity of doing something to protect the health of their constituents and a consciousness that the practitioners and supporters of quackery and of irregular methods of medical treatment were among the influential voters. . . . It was also found to be impossible, in a few of the States, to establish regulations for the practice of medicine which would be shaped to the wishes, principles or prejudices of those members of the Legislatures who believed that they themselves were occasionally benefited by prescriptions that were not wholly scientific in their character, or by remedies that had acquired their reputation by extensive advertising of their supposed merits and efficacy. The legislation of the last year or two, however, seems tending to greater stringency, and to more adequate provision for the regulation of medical practice. . . . In Alabama, for example, the diplomas of medical colleges confer no right to practice medicine in that State; the applicant must be actually examined by a board appointed for that purpose. In Arizona and Pennsylvania and in Washington Territory, the law is simply for purposes of registration. . . . In Tennessee, which has no law of this kind, the practice of medicine is said to be free to all; according to the authority of the Secretary of the State Board of Health, "Any man who claims to be a doctor is one, hence druggists who do not know enough to make a living turn out as doctors in full practice before you know it. A farmer boy, too lazy to plow, reads an old work on practice, or 'Every Man His Own Doctor,' invests six dollars in drugs, and is a physician; and being a 'regular,' we all consult with him."—R. J. Dunglison, M.D., and H. O. Marcy, M.D., THE JOURNAL, vol. 1, Nov. 3, 1883, page 505.



Engineering

C. F. Kettering

IN the autumn of 1931, four men of widely different occupations met at my home in Dayton, Ohio. In the group were a family doctor, a writer, a pathologist, and an engineer who was myself. What they had in common was impatience with so-called expert knowledge that alleged it took 18 months of continuous treatment to cure early syphilis. Why not combine the drugs with artificial fever to cut treatment time way down?

This led to a practical fever machine, the air-conditioned hypertherm, and in less than 10 years a double-barreled fever-arsenic treatment was stopping early contagious syphilis cold in one day. This encouraged U. S. Public Health Service men to try a far simpler and safer one-day, one-shot treatment with long-acting penicillin when it became available in the mid 1940's. This succession of events broke the evil chain of infectious syphilis.

This is a simple illustration of what we too often forget—that all of us, all the professions, are a part of one big work, banding together to fight for every form of human progress. This victory could not have taken place if a single one of these men had been lacking.

The relation between materials and energy is all there is in the entire world of science, and this includes the science of medicine as well as all the others. This insight on the part of engineers in the past 75 years has put many weapons in the hands of the doctors, as Dr. R. E. Zipf pointed out to me recently. Thomas Edison invented the electric lamp in 1869, and this led to powerful light sources that let physicians peer into dark corners of the human body—into the chest, the abdomen, and the bladder and into the eyes to discover hardening of the arteries, to help detect the ravages of diabetes, and to find cancer. This all flowed from Edison's sleepless experimenting with materials and energy.

That's true, too, of Einthoven's study of electromagnetism—using the material and energy relationship to perfect the string galvanometer that made possible the electrocardiogram, enabling doctors to detect damage to the human heart. In this work electronics experts, physicians, cardiologists, and physiologists all have a part, and all are essential.

Again, it was Wilhelm Konrad Roentgen's discovery of the x-ray that led him to see the shadows of bones of the human body and that enabled physicians and surgeons to detect the

first signs of tuberculosis, cancer, and many other maladies.

The development of the cathode ray tube by engineers and physicists, applied to television, enables doctors to observe and study surgeons while they mend wrecked human hearts; by closed-circuit television, thousands of physicians from coast to coast now attend this ultramodern medical school—getting far more knowledge than they used to gain while sitting in surgical amphitheaters or by reading surgical textbooks.

George Eastman, who wasn't even a chemist or engineer or any kind of scientist in the orthodox sense, fussed around with dry gelatin emulsions that led to the wonder of medical photography and added another dimension to medical education. Today's medical journals teach the medical profession tricks of diagnosis and treatment by use of photographs far sharper than medical Latin and Greek words.

The inventors, engineers, and practical mechanics who produced the internal combustion engine have given physicians the automobile, which has vastly speeded up their errands of mercy and expanded areas over which they save human life. The unorthodox Wright brothers developed the airplane, which rushes rare blood types to bring back life to those who a few years ago would surely have died.

There isn't a field, from antibiotics to the atom, in which engineering hasn't been of some help to medical practice. But enough of rehashing past triumphs; what we're primarily interested in is the future—that's where we're going to have to spend the rest of our lives. Looking forward to a more mentally and physically vigorous tomorrow, we must break down the boundaries between engineering and medicine completely. This has already begun, though we scarcely realize it.

For example, it was Alexander Fleming, a bacteriologist, who discovered the mold that makes penicillin. That would have remained academic if the chemist Florey and his group hadn't chemically concentrated this king of the antibiotics. Purified penicillin would still not have been available to physicians if industrialist John L. Smith—who got his education in the Cooper Union night school—hadn't turned the trick of producing penicillin limitlessly in huge fermentation vats.

But penicillin and its brother antibiotics right now are two-edged swords. They save middle-aged people from pneumonia to let them live toward a feeble, discouraged, mentally dim old age, to fill old people's homes and asylums, or to be a sad drag on their children in the future. How are we going to stretch out the vital life span so that these pathetic millions will be put into a productive army in their 70's and even 80's?

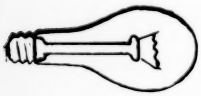
We can begin that right now if only the organic chemists and nutritionists who have developed the still largely unused weapons of synthetic vitamins and hormones to supplement the world's inadequate diet can break down the communication block that separates them from the doctors.

They are kept apart from really starting on this wonderful enterprise by a lamentable medical lingo. They're blocked by formal medical educa-

tion. They're stopped by the very name of the specialty—geriatrics—that deals with mere palliation of the breakdowns of senility, instead of the now possible return to working vitality among older people. Perhaps someone should start a magazine that could be read by both doctors and patients.

Then they would understand the promises that the organic chemists' and nutritionists' vitamins and hormones have in store for them. Then, together, doctors and citizens could start a real fight to make old age wait, to push it back, instead of appeasing it.

This language difficulty afflicts engineers as well as doctors. For example, some years ago a report on an important research project was brought to me. I read it and was mystified, though I had fathered the project myself. I told



the writer, "Please just strike out all the words in this that Mr. Sloan (president of General Motors) and Mr. Grant (in charge of sales) don't understand."

"Now read the report out loud with all those big words left out," I suggested when the writer returned. The report, as then read, was meaningless. And yet on the basis of the original report Sloan and Grant were expected to make decisions vital to General Motors.

Doctors are proud of their medical schools; they're the hardest institutions of learning to get into and to pass successfully out of in the whole country. Yet, when we face it, maybe these great colleges close a door of learning to their bright hopeful youngsters. From beginning to end of their medical course, these poor kids have to learn thousands of new words!

With that mental baggage, one wonders how they can think. When they go out in the world to wrassle with the miseries of their sick patients, maybe all the words they'll use for most of their patients will not be more than a couple of thousand.

This jungle of words can camouflage ignorance about illnesses and how to treat them. In formal education this lingo sometimes seems to provide formulas and rules to prove that the patients can't be treated. That's true not only in medicine but in our own profession of engineering. This business of formulas proving how it can't be done got so bad in our research division in General Motors that we set up a table outside our conference room with a black velvet cover and the sign, "Leave your slide rules here as you enter."

What for? Because our boys were constantly saying, "But Boss, you can't do that . . . boss, this can't be done," and then getting out their slide rules to prove it.

The trouble with not only medical but all other formal education is that it's 5% action to really grapple with a problem and 95% procrastination. For example, physicians are properly interested in how energy can be used by the body to carry on its functions. This job is especially difficult because the body has to have special and subtle ways of obtaining its energy—unlike an engine, it can't run hot. The body has to have enzymes to convert the energy from food into life. Here's where ignorance comes in to stymie the unsuspecting student. Enzymes are so mysterious that I've heard it said that when a professor doesn't know what a substance is he calls it an enzyme. Yet, when a basic fact about an enzyme is found, it turns out to be simple, an example of our old gag—"This problem, when solved, will be simple." For example, not long ago such diseases as pellagra, pernicious anemia, and beriberi not only were incurable but had no known factual cause. Then the organic chemists and nutritionists discovered that nicotinic acid, vitamin B_{12}, and thiamine were key parts of different body enzyme systems—and now outright pellagra, pernicious anemia, and beriberi are as scarce as hen's teeth in the United States.

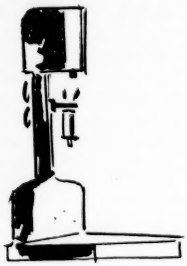
And what's more important, a hidden hunger (the doctor would call it a subclinical deficiency for these three chemicals) is being found responsible for an enormous amount of vague ill-health, for premature old age. This is now beginning to be attacked and pushed back—not by experts but by our family doctors using multiple vitamins, minerals, and proteins.

The bogey of ill-health is turning out to be largely nutritional; what's called "disease" is just becoming to be recognized as this or that chemical defect, bound to be chemically reversible when the given defect is spotted.

At the same time, the lack of certain key chemicals—vitamins, hormones, minerals, proteins, and others—cuts across the troubles of

almost every patient that comes into a doctor's office.

Why are we the healthiest country in the world? In the first place, let's face it, we could be a lot healthier. And in the next place, our family doctors, when they graduate and kick free of the word and formula jungle of their education, are pretty ingenious fellows. The



family doctor, wanting to cure sick people, still manages to take what's useful to him, even if he doesn't know its chemical formula.

We ourselves have been fooled by big words that hide the simplest, most fundamental facts. We've spent a great many years on the study of the growth of plants, because that's the whole story of solar energy. Plants have the ability to trap energy from the sun and hold it. That's the way we get our food and fuel and our living and everything else. We hadn't the slightest idea of how it was done. But we did know we could find out if we could do it the way the plant wants to do it—instead of the way we think we ought to do it.

Originally, we thought the plant's great trick was its possession of chlorophyll. We thought we'd made our problem simple by naming the project: "Why is the grass green?" Chemists put on a big drive to discover the chemical structure of this chlorophyll. They solved it, but it didn't give us the answer to how the plants trapped the sun's energy. We looked in the dictionary and found chlorophyll was just the Greek word for green leaf, and we found we didn't know any more about it in Greek than in English.

You'd be amazed at how many things—especially in medicine—are only a Greek or Latin synonym. When we'd dug down beneath that big word, chlorophyll, we found that the supposed mystery of the sun transforming its energy into life turned out to be a rather simple chemical gimmick—the partial reduction of the carbon dioxide in the atmosphere.

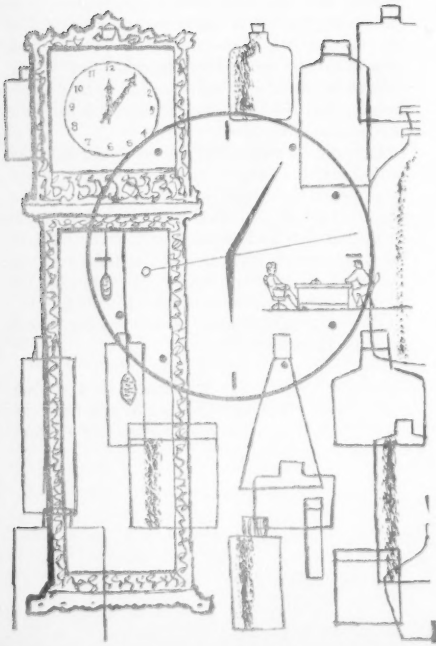
A final word on formal education of which we're so proud as the cause of the glory not only of medicine but of all our professions, engineering included. This is what's supposed to be responsible for progress. But real progress is made by those who are quite different from educated people. Facing an inscrutable disease, the men who make progress do so because they tend to throw statistics out the window and start with simple reasoning. They've shaken themselves free of a simple bogey:

From the time kids start kindergarten right on through the time they're examined in medical school several times each year, if they flunk it's considered terrible by the teachers. But an inventor or a researcher or clinical investigator can fail 999 times, and if he succeeds once, he is in. That's the difference between education on the one hand and the invention and research that mean real progress on the other. Our young fellows in the schools get so afraid of that word, failure, that they're scared to start out on their own on anything new.

It would be wonderful if some medical school would install an experimental course where the boys would be taught to fail intelligently. The point is that all schools should teach the simple principles that lead to progress. Just as in industry a successful concern is one that best serves the needs of its customers, so a successful researcher is one who runs errands for the project. And a successful doctor? A real doctor is one who serves his patients.

Charles F. Kettering
Research Consultant and Director
General Motors Corporation

What Does the Doctor Do? Much. What Does the Patient Want? More.



There is virtually no phase of America's daily living that has not changed radically, almost incredibly, in the past 75 years, and no area in which the change has been greater than the field of consumer goods and services.

The consumer, which, of course, means everyone, bears very little relationship to his or her great-grandparents in his habits of buying. He or she now buys, ready-made, most if not all of the things he used to make or grow. He shops in vastly different surroundings, pays different proportions of his income for different necessities and luxuries, leans heavily on installment buying, a credit system unknown three-quarters of a century ago. In some instances he travels perhaps hundreds of miles to shop—witness the periodic buying trips to the nearest metropolis. In other cases he demands that certain products be not more than minutes away from home—the corner drug store, the neighborhood movie, the suburban branch of the city store all exist because the consumer insists on proximity.

But, of all the changes in the consumer picture in 75 years, undoubtedly the greatest is the emergence of a staggering multiplicity of choice. The consumer of the 1880's was narrowly limited in the choice of products or services. More often than not there was only one store where he could buy pots or plows or parlor furniture, and frequently that store carried just one kind of each of these products. Usually there was just one newspaper to buy, one way to travel between any two points, one shoemaker, one carpenter. And in the majority of cases the consumer had access to one doctor—one man to deliver the babies, perform the operations, diagnose the symptoms, and prescribe the cure for any disease contracted by any member of the family. Today it is difficult to think of a single product or service in which the consumer is given no choice. Every product made has 10 or 1,000 counterparts made, with slight variations, by other manufacturers.

Many of these variations and developments have been stimulated by consumers themselves. Others have originated with the producers and purveyors of products and services who have anticipated and even created demands. Regardless of the route by which they arrived on the current scene, these variations have resulted in enormous potential convenience and satisfaction. But they have added a complication. The consumer is now faced with the necessity of

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deciding among them. Naturally he wants to know just what each promises, which one is best for him and why. And he wants to know these things more about the medical care he gets than about anything else he buys.

A handful of years ago women were possessed of three primary fears: polio for their children, heart attacks for their husbands, cancer for themselves. Of these, the first is now largely gone. Of the second and third there is diminishing fear, expanding hope. Earlier in the century, diphtheria, whooping cough, mastoiditis, and pneumonia, among a dozen others, were dread diseases. The despair that accompanied them has been removed. Infant mortality has been reduced to a miraculous extent. The public is volubly grateful. Medicine is its hero; the doctor is its friend.

In every corner of the United States consciousness of what medicine has accomplished is extraordinary. This is due in no small measure to responsible and comprehensive coverage by the lay press. Average Americans know now that being overweight, once considered a reasonable indication of good health, is indeed unhealthful; their awareness of the need for calorie counting, their familiarity with the significance of proteins and vitamins, their dependence on x-rays and periodic checkups, their lessened reluctance to use hearing aids—all represent information and points of view which doctors and their spokesmen have fostered.

Advances in geriatrics are so extraordinary that average men and women have not yet been able to adjust to them. Indeed, these advances have created new and challenging problems for editors of consumer publications: the age pattern of readers is changing—there are not merely more older readers but more younger readers as well. The fashion requirements now are altogether different: today's grandmothers buy their clothes in the junior departments. The housing requirements now are altogether different: it is not merely a matter of who is going to live where, but of who is going to live with whom—with which in-laws, for example—and for how long. Thus, attention is being focused on insurance policies with retirement clauses and on retirement hotels and retirement communities. Longer lives have brought unaccustomed leisure and a growing need to fill the unexpectedly unoccupied hours.

Never, since the initial discussions of it, has socialized medicine had so little appeal in the United States. This is due in part to the depressing reports emanating from European lands where such practice is common, but in much larger part to the eminently satisfactory experience Americans have and have had with medicine in their own country. This satisfaction, it should be noted, does not go quite so far as to embrace the cost of medical care, because, even with the advent of such organizations as Blue Cross and Blue Shield, American families find the cost of medicine, particularly in the realms of surgery and chronic illness, almost more than they can cope with. But they will cope, in preference to having the federal government participate.

Confidence in medicine is such that the average American family anticipates without any reservation the discovery within the next decade of specific cures for cancer. It might be pointed out, in this area, that, though the general public recognizes the need for constant warning against reported discoveries, it is not always convinced that such extreme caution as exists is altogether justified. As long as quacks are properly disposed of—and the public naively assumes that exposure is quick and sure—there is a conviction that advances in the treatment of cancer should be reported more fully and even more optimistically in the lay press. The public's attitude is, "What is wrong with hope?" and, "Who is harmed by it?"

It should not surprise the leaders of medicine to hear that fear of mental illness is beginning to approximate the fear of cancer. The continuing campaigns to bring about more hospital facilities for treatment of the mentally disturbed, coupled naturally enough with repeated publication of the almost unbelievable number of persons requiring treatment, have brought into being a complexity that simply did not exist in the average mind at the beginning of the century. "But American medicine will take care of

it!" "Already we have dozens of different tranquilizers that are helping to do the job!" Such is the course of the thinking of Americans—of practically all of them.

As I have indicated already, doctors have given the people a greater life span—more time for themselves. What do the people, the "consumers" of medicine, want now? They want more of the doctor's time! It is their one, their only, to all intents and purposes their exclusive, important complaint: "Doctors are too busy; we are no sooner ushered into their offices than we are ushered out; we'd like to talk more, to tell them more; we'd like them to explain more; to listen more."

It is an interesting commentary, but medicine has brought this on itself. Perhaps it is part of the penalty of the faith medicine has engendered. It is, in any event, not a cheerless penalty. Most other professions would suffer it gladly.

Herbert R. Mayes
Editor of *Good Housekeeping*

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Transfusion of Blood by Hypodermic Injection.—Dr. Paladini reports [as abstracted in the *British Medical Journal*] an interesting case of successful injection of blood into the subcutaneous cellular tissue of the abdomen in a woman suffering from profuse menorrhagia. R. S., pluripara, aged 48, was reduced by menorrhagia to a profound degree of anæmia. On August 4, the loss was so great that the patient's state became most alarming. Transfusion of blood was urgently indicated; no apparatus for this being at hand, it was determined to inject the blood by means of an exploratory trocar and an ordinary syringe into the subcutaneous cellular tissue of the abdomen. The blood, taken from the husband's arm, was heated to prevent coagulation. The trocar was inserted about four fingers' breadth to the left of the umbilicus, and pushed well in so as to somewhat break up the meshes of the cellular tissue, and thus secure room for the blood to be injected. The stilet being withdrawn, an elastic tube was fastened to the end of the canula; the blood was taken up by an ordinary metal syringe (about 90 cubic centimeters capacity), its nozzle being made fast to the elastic tube, and injected into the subcutaneous cellular tissue, where it appeared as a lump about the size of an egg. Two syringefuls were thus injected. The patient felt no pain; and after two hours the swelling had entirely disappeared. No abscess or other ill effect followed, a slight ecchymosis only for a few days marking the site of the injection. On the next day the patient was much better, and began to take and retain nourishment and sleep well; for some days before there had been constant vomiting, and no sleep. The lax connective tissue lends itself admirably to the transfusion of blood, and to its rapid absorption. The quantity of blood might be easily increased by repeating the injection in two or three different places, to 300 or 400 grammes (about 10½ or 14 ounces). This method is free from the dangers of venous or intraperitoneal transfusion, and is most easily done.—Medical Progress, THE JOURNAL, vol. 1, Dec. 22, 1883, page 705.

Specialties, and Their Ethical Relations.—Twice, within a short time, has the editor of this journal been applied to for information (and many other times in years past) in regard to the questions, "How far, and in what way, can those members of the profession who are desirous of pursuing a special practice, or, in other words, limiting their practice to certain diseases or the affections of certain organs, make known their position by cards or advertisements without violating the National Code of Ethics?" Provisions plainly prohibited all classes of regular and honorable practitioners from advertising either in the public prints or by private cards in such a way as to call the attention of those laboring under particular diseases; the rapid development of specialties soon led those following them to assume special titles not conferred by any educational institution, and not only put the same on their cards, but, in addition, to use such expressions as "special attention" given to this or that disease or class of diseases. . . . [The Judicial Council reported in 1874 that] "the title of Doctor of Medicine covers the whole field of practice, and whoever is entitled to that appellation has the right to occupy the whole or any part of the field, as he pleases. . . . As all special practice is simply a self-imposed limitation of the duties implied in the general title of doctor, it should be indicated, not by special or qualifying titles . . . but by a simple, honest notice appended to the ordinary card of the general practitioner, saying, 'Practice limited to the diseases of the eye and ear,' or 'to diseases peculiar to women,' or 'to midwifery exclusively,' as the case may be."—Editorial, THE JOURNAL, vol. 1, Nov. 3, 1883, page 511.

Cholera.—Words of warning come from the East, of the approach of cholera in its worst form. To the medical profession, therefore, to be forewarned should be to be forearmed. The duty of the hour is to look well to our conceptions of the disease—its cause, its pathology and its treatment. We have to-day only the experience of the past to guide us. This, confessedly, is not assuring; since all theories and all forms of treatment have been fruitful only of disastrous results. In fact, no treatment at all has given nearly as good results as the most scientific treatment. The average mortality has ever been 50 per cent of the persons attacked. . . . I submit a theory of the disease which, in practice, has afforded good results, viz: 1. That cholera is a true neurosis; 2. that it consists essentially in a disturbance of the general innervation; 3. that its leading symptom is a true hæmorrhage; 4. that its source is to be sought for in meteorological conditions.—H. R. Rogers, M.D., THE JOURNAL, vol. 1, July 28, 1883, page 94.

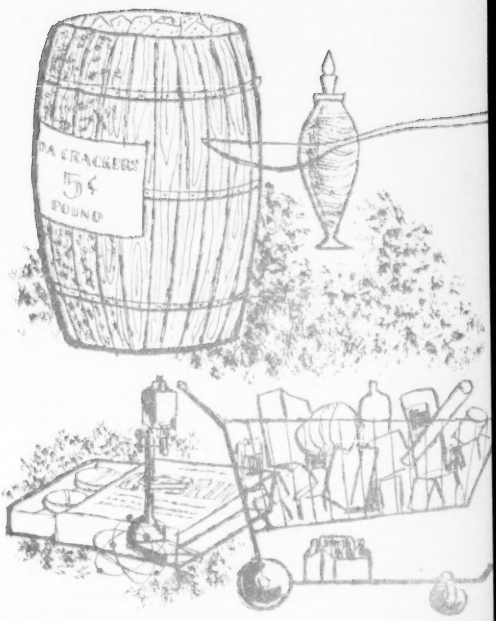
Medicine Serves the Community

J. B. McConnell

On being asked to contribute an article for this 75th anniversary issue of THE JOURNAL of the American Medical Association, I at first had some doubts. What, I thought, does a merchant have to say to men who are devoting their lives and their energies to medical science? Have the two fields, medicine and merchandising, shown any parallel development in the past three-quarters of a century? Is there any common ground, any valid basis for comparing the two fields?

In seeking answers to these questions, I soon sensed that we do indeed have at least two important circumstances in common: 1. Each of our fields is concerned with serving basic human needs. People expect us to be there when they need us, and they count on us both to supply whatever they may require at any given time. 2. In medicine, as well as in merchandising, the past 75 years have been great years, highly significant in the far-reaching developments that they have brought.

The doctor, of course, is much more familiar



than I am with the developments in medicine since 1883. He has learned of many of the achievements in his field in the pages of THE JOURNAL. The contributions of such men as Harvey Williams Cushing, Willem Einthoven, Frederick Banting, John Macleod, and, more recently, Alexander Fleming and Jonas Salk are too well known to be reiterated here.

The doctor's field, then, has come a long way since THE JOURNAL began publication 75 years ago. The era of the country doctor with his horse-and-buggy practice has given way to the era of modern medicine with its vast array of new drugs, new techniques, and extensive clinical facilities. The great advances in medicine over the past seven and one-half decades are reflected in the lengthening life span of Americans and in their increased opportunity to enjoy physical well-being, particularly in their later years. From this perspective, it must seem quaint and unreal indeed to recall the country doctor—the man who snatched a few moments of sleep while journeying from one patient to another.

No less remote to us in merchandising is his 1883 equivalent in our field: the keeper of the old-fashioned country store, with its shelves of dry goods, its potbellied stove, and its faint aroma of spices. The merchant himself is a figure out of a Currier and Ives print. He has a handle-bar mustache. He wears a shirt with a detachable collar, and the collar is invariably detached. He chews tobacco, perhaps, and is as adept at bartering as he is at buying and selling.

In the years since this venerable individual carried scuttles of coal to his stove, merchandising—like medicine—has benefited from the aspirations and actions of an imposing array of great men. John Wanamaker, George F. Gilman, George Huntington Hartford, Frank W. Woolworth, James C. Penney, Montgomery Ward, George Thorne, Richard Sears, Julius Rosenwald, and General Robert E. Wood—these and many other men have made indelible contributions to the business of moving goods into the hands of consumers. Thanks in part to their genius and their efforts, merchandise today flows out to people in the United States in quantities unmatched in times of peace.

In the past 75 years, increasingly efficient distribution methods have gone hand in hand with improvements in manufacturing processes to give Americans the highest material standard of living ever known to man. But perhaps you wonder exactly what significant developments

in merchandising have taken place since 1883 to help bring all this about.

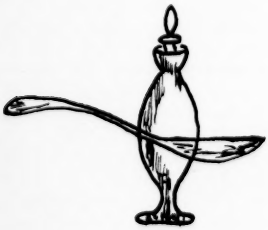
There have been many, of course. Two of them in particular are worthy of note here, since they are responsible in a large degree for the tremendous advances in our field during the past three-quarters of a century. The first is the establishment and growth of the great mail-order houses as a unique American institution. The second is the evolution and expansion of the chain store idea to every remote corner of our country.

You may rightly maintain, of course, that both mail-order houses and chain stores were not unknown when THE JOURNAL first went to the printer. Selling by mail took place as early as colonial times. And the Hudson's Bay Company, probably the oldest chain operating today in North America, dates back to 1670 and a royal charter from Charles II.

It is nevertheless still true that the period since about 1883 saw the greatest growth and development both of mail-order houses and of chain stores.

My own company, Sears, for example, was founded in 1886 and had mail-order sales of more than 50 million dollars annually by 1904. James C. Penney, one of the pioneer chain-store merchants, did not open his first store until 1902. Frank W. Woolworth's first store predates 1883 by only four years. His first unit opened for business in Utica, N. Y., in 1879.

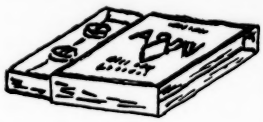
As mail-order houses and chain stores became ever more important parts of the American scene, they brought about a veritable



revolution in the field of merchandising and distribution. Combining the principles of volume buying, the growing web of railroads, and favorable postal regulations, mail-order houses offered isolated rural customers their first opportunities to choose from a large selection of modestly priced goods.

As modern roads ended rural isolation and the country became more urbanized, the chain stores employed mass purchasing power to bring the blessings of low-priced goods to urban customers. Penney's, in 1910, for example, sold children's underwear for as little as 7 cents; ladies' fancy cloth coats for $2.98; men's ties for 15 cents.

To gain an idea of how important these merchandising innovations were to the growing American economy, we need only inspect some



figures. It is estimated that in 1914 there were about 2,000 chains operating approximately 24,000 stores with an annual sales volume of one billion dollars. Fifteen years later, there were about 7,000 chains operating approximately 160,000 stores whose annual sales volume approached 11 billion dollars.

But the great mail-order and retail organizations which developed in the past 75 years have done more than simply sell vast quantities of merchandise at moderate prices. My own company was one of the pioneers in establishing standard sizes for clothing—something that is taken for granted today. In 1911, Sears established a merchandise testing and development laboratory which today not only tests merchandise but also helps many manufacturers develop entirely new products. Today, testing and research are as much a part of merchandising and its continued progress as they are indispensable tools in the field of medicine.

These, then, are some features of the parallels in the development of our two fields, medicine and merchandising. We are even subject, I suggest, to some of the same pressures. Merchandising organizations must go where the people go. That is why, in 1925, Sears entered the retail field in urban areas. That is why now we, and many other merchants, almost invariably locate our new retail units in outlying suburban areas where shopping by car is both pleasant and convenient. All of us know that many doctors, too, have joined in this trek to the suburbs.

But perhaps most important of all, sound merchandising like sound medicine is predicated upon a reputation for integrity. The faith that customers have in products and companies is as important to merchandisers as the faith patients have in the skills and knowledge of doctors. Neither of our fields can long survive without it.

What are the new frontiers we face in the next 75 years? In medicine, some of the more obvious problems of tomorrow are posed by the 1,100,000 Americans suffering from cancer or other tumors, by the 9,000,000 mentally ill, by the 9,590,000 suffering from diseases of the heart and circulation, and by the 10,000,000 who suffer from arthritis and rheumatism. Most assuredly, THE JOURNAL of the American Medical Association has many new conquests to record in the years to come.

In merchandising, at least one of our new frontiers is an old one. Despite the advances of the past 75 years, the cost of distributing goods still accounts for a large share of the money spent to purchase the goods. With this condition in mind, it is obvious that the journals of merchandising also have many new conquests to record.

Fowler B. McConnell
Chairman of the Board, Sears, Roebuck & Co.

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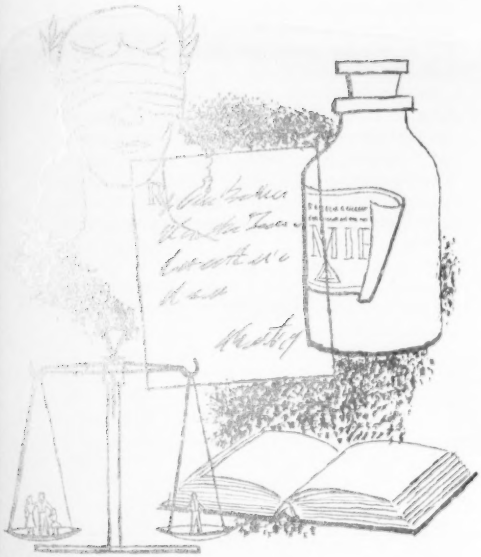
Pulse-Wave Velocity.—The experiments were made with the author's apparatus for simultaneous inscriptions, which, as known, differs from Marey's, notably in transmitting by water instead of air. . . . Whilst the movements were being written, the chronograph also wrote the time in fifths of seconds. Immediately after an experiment, the slide was repassed, and while halted at selected points, the levers, by manipulating the membrane or tube of the explorers, were made to describe their curves across the line of traces; and it was usually arranged so that the proximal lever would cross at or near the beginning of the waves, in order to simplify the measurements and render the time-relations more apparent to the eye. These lines are synchronous signals cutting the traces at the same instant, and always indicate the exact time-relation to each other of the movements recorded. . . . The lines were photographed on wood, using the glass slides as negatives, and then the engraver, with great care and skill, followed the lines without deviation. So perfect is this work, that the fine measurements made on the glasses are found to hold good in the reproductions. . . . PROPOSITION 1.—The duration of the presphygmic interval varies with the pulse rate; being shorter with frequent and longer with rare pulsations. Experiment on man never fails to prove variation in the sense stated, of the cardio-carotid interval coincident with a considerable variation of pulse rate. . . . The heart and carotid were traced before, and immediately after, active exertion. The pulse rate before was 82, after 130. The cardio-carotid interval was before .075″, after .047″, all as shown.—A. T. Keyt, M.D., THE JOURNAL, vol. 1, Oct. 20, page 437; Dec. 15, page 661.

The Tribulations of a Country Obstetrician.—Under this title a Dr. Pierre gives, in the *Gazette Med. de Picardie*, a very amusing account of his experiences. One case can well be given in his own style: "I was on duty at the Hospital Saint Antoine. One night, about one o'clock, I was awakened to receive a patient. She brought with her in her arms an infant that was nearly naked. I received her as an urgent case. The next day she gave me her history, but I will let her speak for herself: 'I am a very gay person, sir. I love the ball. I have not absented myself during my pregnancy, which yesterday passed the seventh month. At ten o'clock last evening I was one of the first at the dance, near the Place du Trone. I did my best. After several country dances I felt pains. So much the worse, said I, if it is coming this evening, as I have not reached my full time. I will leave the hall as late as possible. But the pains continued. The more I suffered the more I danced. In the *cavalier seul*, which at our balls leaves the ladies to dance alone, seized with sharp pains, I made some astonishing contortions while dancing. I had a remarkable success. Then the *gallop* followed, in which I seized my partner with a vigor I did not know I was capable of, when suddenly the waters broke. The accident was observed, but was attributed to a different cause. The jokes rained on me. I tried to escape; they pursued me. I ran out; they followed me. I passed down the Boulevard Mazas; some thirty of them were at my heels. Where the Mede Charenton branches off I climbed over the board fence of a wood-yard. Fortunately, my pursuers had lost track of me. I sat on the ground; it was time; the child came five minutes afterwards. I have wrapped it up in my handkerchief; and small as it is, I think it will live.' She was right; both mother and child did well, and she left the hospital ten days later without any disagreeable complication."—Medical Progress, THE JOURNAL, vol. 1, Aug. 25, 1883, page 214.



Medicine and the

Charles S. Rhyne

The 75 years covered by the life of this great professional JOURNAL tell a story of magnificent service by a great profession. On behalf of the American Bar Association, I congratulate the editors on the excellent recordation of a proud history, and I further congratulate all the members of the medical profession who have contributed to that record.

The miraculous scientific and technical achievements of our day have created unprecedented growth and change in our pattern of life. Distance is now almost meaningless, as rapid transportation and communications have shrunk nations to neighborhoods. We have witnessed such achievements as flight faster than sound, man-made satellites in space, the splitting of the atom, and other turbulent changes almost too numerous to name or to evaluate under prior standards and experience.

Certainly in this area of scientific development, the great medical profession need bow to no one. Over the past 20 or 30 years medical contributions to the health and welfare of our people through careful research have been magnificent. That this is true is clearly evidenced by the fact that miracle drugs, lifesaving vaccines, and new types of equipment have become household words even for the man on the street.

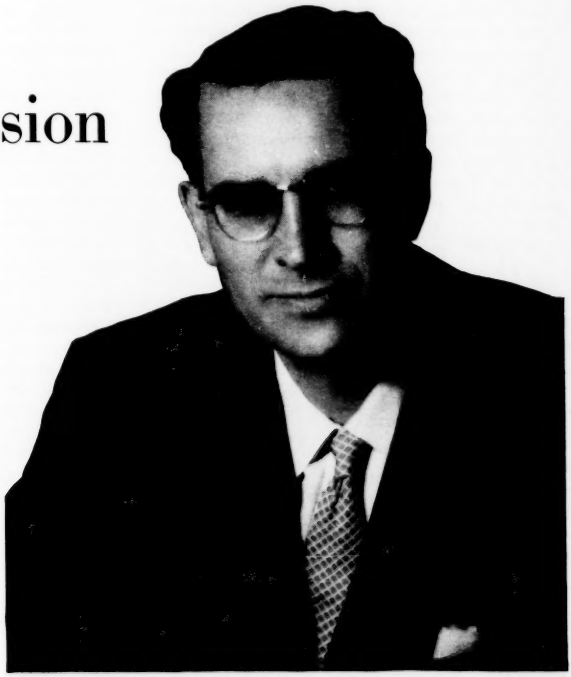
However, in this anxious, hurried era in which we live, no profession can be satisfied to make its advance solely in the area of the physical and the material—men who are dedicated to public service must go further and insure that our respective professions make equal progress in the area of human relations and social de-

velopment. For certain it is that the most difficult problems confronting mankind are in the realm of human behavior. Doctors, lawyers, educators, ministers, sociologists—all must pool their resources and their experience to work out the best solutions for the benefit of the public.

The brilliant contributions of the medical profession over the years are indeed achievements which merit great praise. But this service must be only a prelude of things to come. Current needs of the public cry out in a voice which professional responsibility cannot deny. Increased efforts will produce progress in the underdeveloped area of social relations commensurate with the tremendous advance in scientific and technical knowledge. The lag in the field of human relations must be removed, and there is little doubt that interprofessional cooperation is the answer. Let us consider some major areas where doctors and lawyers have a mutual interest and a common duty to cooperate and combine their expertise to alleviate serious public problems.

Under the system of administration of criminal justice here in the United States, violation of the penal code often involves the nebulous issue of intent. Where this issue may be resolved simply by examining the facts surrounding the action of a sane, normal defendant, the average

Legal Profession



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juryman is probably as competent to make a determination as any expert. But where the issue of intent is further clouded by evidence of habitual or extreme drunkenness or by the defenses of insanity or retarded mentality, to forego the knowledge available within the ranks of the medical profession is to try the defendant on only half the facts. The prevalence or even the possibility of this situation occurring and resulting in faulty administration of justice is deplorable. Yet the number of criminal cases whose resolution rests almost entirely on medical evidence is growing, certainly to some extent because the increased learning of the vigorous medical profession indicates mentality problems today which were not formerly recognized.

Members of the medical profession have the technical knowledge and understanding of these facts. Lawyers have the expertise necessary to convey that knowledge to the court and to a jury. But neither profession can function adequately in this area without the cooperation of the other. Our dedication to and responsibility for public service demand that we insure that cooperation.

This same necessity that we work together holds true in many other areas of the administration of justice, both civil and criminal, where doctors have the facts and the knowledge and lawyers have the training and the responsibility for presenting that knowledge for the consideration of the courts. In all accident and injury litigation, medical testimony is most important as the basis for accurate estimates of damages. This has always been true, but, as cases involving chemical injuries and radiation increase, it becomes even more so. Diagrams, x-ray pictures, and careful explanation of modern medical concepts are invaluable to a jury of laymen as aids in clarifying the issues which must be resolved. It is impossible to accurately establish the extent of injury and the resulting damage without such evidence, and it is equally impossible to adequately present such evidence without full medical-legal cooperation.

Another important area where the need for medical-legal cooperation is growing is the handling of juvenile crime. Unless the alarming trend toward increased criminal activities by juveniles is reversed, the very substance of our democracy could be endangered.

We must, of course, recognize that punishing children as adults often results only in developing hardened criminals. On the other hand, we cannot continue to allow violent crimes of youth to be treated as unmeaningful and dismissed again and again with mild warnings. Certainly many ramifications of this problem rest squarely with the responsibility of the bench and bar. The legal profession has an obligation to study and analyze the law to recommend improvements so as to meet and solve the new and developing social problems. We have not yet met our responsibilities here. But this is a medical problem also—within that province of medical knowledge that deals with the mind and adjustment to social environment. From the science of medicine comes the knowledge necessary to determine which young people can be helped and how to go about rehabilitating them. Aided by full medical information, lawyers will gain insight into the proper legal cures to heal this great national problem. Together we must press upon the authorities our peculiar abilities in this field and demonstrate the contributions we can make.

The problems and the social needs are clear. As professional men dedicated to the public service, we cannot be content to know that we are working at less than our full capacity. In the areas mentioned above and in many others,

neither profession can truly fulfill obligations unless they work together, for their particular abilities enable them to complement each other's activity in these fields. Thus, it is apparent that we must increase our cooperation in order that we may increase our service.

Perhaps the most effective beginning point is with a healthy exchange of ideas and a closer working relationship between bar associations and medical associations. Good laws can exist only when formulated on a basis of a full and complete understanding of all possible ramifications of the problems affected. Where the medical aspect is vital to the issue, steps must be taken to assure that the necessary information is always made available to the legal people who must draft and interpret the legislation. The better we get to know and understand each other and each other's problems, the more effective will be our joint efforts.

Some steps have already been taken along these lines. Two very fine films in the series "Medicine and the Law" have been extremely well received. This series was created through the joint efforts of our two Associations and will consist of six complete films on every phase of medical-legal cooperation. The third of the series, dealing with the subject of traumatic neurosis, is now in production and scheduled for its première in San Francisco on June 25, 1958.

The medical-legal committees of the two Associations are constantly investigating all possible areas of cooperation. The Joint A. M. A.-A. B. A. Liaison Committee has proposed a national interprofessional code. Among other things, this code calls for greater use of pretrial conferences and discussions, prior notice to physicians who are to be subpoenaed, greater consideration of the time demands on the physician-witness, more definite arrangements concerning fees, and, in general, greater respect and cooperation between the legal and medical professions. Many other beneficial projects have and will continue to stem from the activity of this and similar groups. Our mutual professional obligations to the public require that we join forces to insure that progress in the complex area of human relations keeps pace with the great technological and scientific advances of our era. Only by working together can we meet this great need that is ours jointly to fulfill.

The medical profession has a magnificent record of achievement. Its contributions to the over-all welfare of the community are acknowledged by man in every field of activity. But this great past record increases its responsibility for future service, for the public has become dependent on its leadership. The challenge is clear, and it exists for all professions dedicated to public service. We in the legal profession are ready and look forward to joining with members of the medical profession in continued and expanded joint effort for the advancement of the welfare of the nation and of the world.

Charles S. Rhyne
President of the American Bar Association

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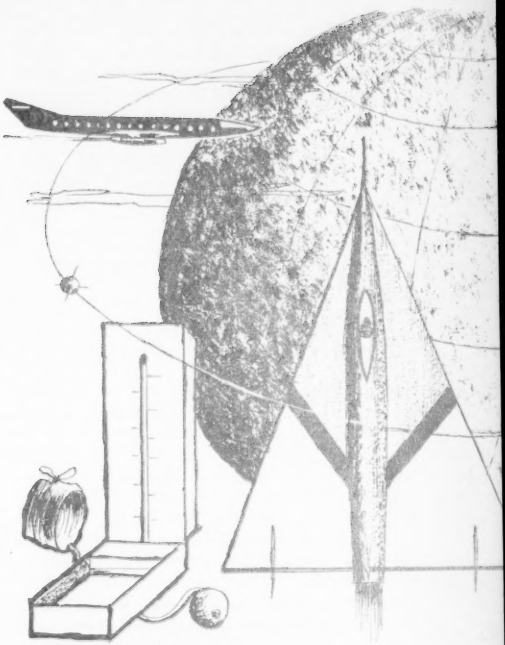
The Physiological Effects of Coffee.—Dr. J. A. Foot, of Rio de Janiero (*Bull. Gen. de Therap.*, June 30) gives us the effects of a strong dose of coffee upon his own person after recording his condition for fifteen days of total abstinence from coffee, and follows his record of the effects of the strong dose, by noting the influence of two cups of coffee daily for twenty-five days. . . . He made an infusion of over 8 oz. of coffee in a quart of boiling water, drinking the whole of it during the day from 7 a. m. to 9 p. m. During that day the pulse increased in rapidity to 108 in the afternoon; in the evening it reached 114. He went to bed at 11 p. m., but could not sleep; reflex contractions were produced in nearly every part of the body alternately. Very painful cramps in the thighs, legs, feet, walls of the thorax and in the muscles of the hyoid region. . . . The pulse kept between 110 and 112 through the night. It was intermittent, as was the heart's action, losing one pulsation to every four. The next day the pulse was seventy-six; there was headache and no appetite. . . . His other experiments with moderate doses prove to his satisfaction that the use of coffee does not prevent advanced age and the preservation of good health, and that life seems to be prolonged in the countries where coffee is much used.—Medical Progress, THE JOURNAL, vol. 1, Aug. 18, 1883, page 177.

Medicine and Aviation



Contemporary history can cite few parallels to equal the progress achieved by the sciences of medicine and aviation, which have been drawing closer and closer together in the dramatically progressive years of the current century. The pages of THE JOURNAL of the American Medical Association have recorded, in the proud 75 years of its existence, more progress in extending man's physical well-being than had been achieved in all the previous history of mankind. In the scant 50 years since the airplane was invented, we have expanded man's horizon farther than had ever been accomplished in the history of his movement upon this earth. Within the span of a single lifetime, aviation has changed forever our concept of time, distance, and space.

With the present high state of development in important lines of scientific research and chemistry, and despite the tremendous record of past progress, the medical profession stands today at the threshold of achievements which were but dreams only a comparatively few short years ago.

Similarly, aviation, having progressed at a fantastic rate, is only today moving into its true age. With the tremendous advantages of jet and rocket power, electronics and the score of technological break-throughs, aviation is destined to progress farther and faster in the next decade than it has in the past 50 years.

In this future of unlimited possibilities that stretches ahead of the aviation industry, its alliance with and reliance upon medicine will be extended at a rate few recognize today. Our industry's engineers and designers have learned a great deal from the medical profession. There is one lesson which we have applied with considerable practical effect. It is recognized by all, I am sure, that safety is the primary business of an airline's operation.

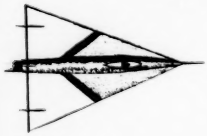
Safety, like health, involves constant examination and the taking of preventive steps well in advance of any foreseeable trouble. Aircraft structures, the inner workings of engines, and practically every element of the aircraft and its accessories are made the subjects of periodic x-ray examinations, for instance.

Every element of an aircraft is subject to periodic "physical" examination, regardless of what the daily "chart" shows, and the most meticulous care is lavished on all materials and supplies used in the production or the operation of the aircraft in order to insure a healthy state of operation. In our aircraft operations, we call this progressive, or preventive, maintenance.

More than 25 years ago, in recognition of the importance of the physical health of its personnel, Eastern Air Lines established the first airline

medical office in the airline industry. That office applies to all flight and supervisory personnel the same type of progessive or preventive maintenance that is devoted to maintaining an unsurpassed safety record in the operation of our aircraft.

This record begins with the individual's association with the company and is made a compulsory requirement through periodic



checkups, the most complete that the medical profession has been able to design. Our record in the interception of latent illness or disease is most impressive, and our medical surveillance has produced tremendous dividends for the health and continuing efficiency of both our flight and our supervisory personnel.

Beyond this, of course, Eastern and all airlines have, for years, worked closely with manufacturers and the military services of the United States in the close study of the effects of the elements encountered in flying upon individuals both as members of flight crews and as passengers, as well as those who work on the ground.

Important progress has been made in this direction both in the elimination of causative elements which could affect the mental or physical health of those exposed to aviation and in the development of a means of better adjusting the physical being to the elements introduced by air transportation.

The intimate relationship between medicine and aviation, however, is most dramatically demonstrated in the preparation we are making to take the tremendous step into outer space. We have, within our technological means, the vehicles in which movement in outer space can be achieved and the instruments through which it can be controlled.

We know that medical science, working hand in hand with technological engineers, can devise the means for adjusting the human being to the elements and the forces which are to be encountered in the progressive adventure into outer space. We know that man is inherently superior to his environment and that the providence which enables us to expand into those elements will enable us to produce the means of protecting human life within that environment.

Within 50 years we have progressed from transport speeds of 30 mph to today's speeds of 350 mph. Within this current year, we will advance those speeds another 100 mph through the first application of United States–manufactured jet power, Eastern's prop-jet Electras. Within another year, the first of the great straight-jet liners will advance travel schedules up to the 600-mph stage, just short of the speed of sound itself.

This is a fantastic rate of progress. Yet, we have on our drawing boards today aircraft which could begin to take form scarcely a year from now and which would be capable of traveling 1,500 mph and, within 8 to 10 years, great liners of the sky which, at cruising speeds of 3,000 mph, would bring Miami within 20 minutes of New York, Los Angeles within an hour, and London within an hour and a half and which could span the world in approximately eight hours.

There is no doubt that we will penetrate outer space in manned aircraft within the comparatively near future. To equip for this challenging conquest, we must rely as much upon the science of medicine as we do upon the aeronautical and astrophysical sciences.

Far from being simply adventures into the hitherto unknown, these expeditions into the upper universe hold tremendous promise for the preservation of peace. As a police force carrying atomic warheads, manned aircraft will orbit beyond the upper reaches of the atmosphere, providing a constant peace patrol about the earth. Through such a demonstration of the folly and futility of war, the airplane of the future will be able to devote its tremendous potential to the relative control of weather and the directional guidance of interplanetary forces for the benefit of man's fuller inheritance of the universe which was created for him.

Edward V. Rickenbacker
Chairman of the Board, Eastern Air Lines, Inc.

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A Doctor's Model House.—Really, our English cousins are becoming too much of a puzzle to us. Here we have just established the fashion, which has become widespread, of houses with open fire-places and windows that are easy of access and have facilities for the free entrance of fresh air, in accordance with English prejudices. And now we find the *Lancet*, under the above heading, congratulating Dr. Hogg, of Bedford Park, Chiswick, on his successful attempt to solve the vexed question of house-heating and ventilating, by building a house in the Queen Anne style, where no window can open, and where there is no fire-place except in the kitchen. He has placed a large passage under his hall for an air-chamber that can be cooled in summer and heated by steam-pipes in winter. This air then penetrates throughout the house by apertures in the skirtings and cornices. In the roof of the house is a foul air chamber with which each room connects by exhaust shafts. The kitchen fire is utilized to produce exhaust suction in a large shaft running from the foul air chamber to the back of the fire, and travels again up and out by the chimney. It is calculated that the atmosphere is entirely changed throughout the dwelling in twenty minutes without the slightest draught. The even temperature throughout is an argument in favor of health, the absence of dust from fires and the small cost of heating is an argument in favor of economy and house-keeping.—Medical Progress, THE JOURNAL, vol 1, July 28, 1883, page 88.

Lemon-Juice and Oysters.—M. Cortes, a distinguished microscopist and biologist, decides from his researches, that the practice of using lemon-juice with oysters is not only a matter of taste, but that it also has its utility, as lemon-juice has the property of destroying the animalcules which infest the stomach of the oyster. —Medical Progress, THE JOURNAL, vol. 1, Aug. 25, 1883, page 210.

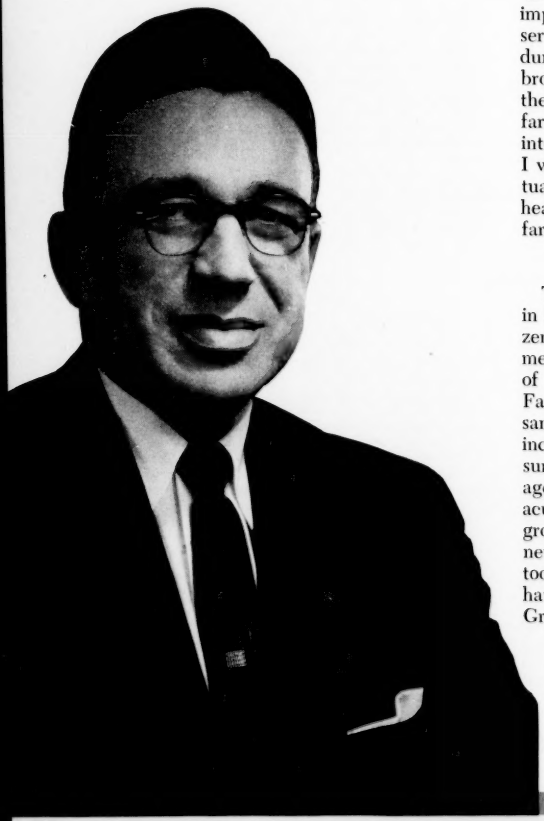
Progress of Yellow Fever.—Advices from Pensacola to September 4th represent the city as continuing healthy and free from the fever. Three new cases had been reported at the navy yard, and one death. The death was that of a Dr. Bosso, who is represented by the newspapers as having had a specific for the cure of yellow fever. But it seems to have failed in his own case. It is claimed that several cases of the fever have occurred in the village adjoining the naval reservation. News comes from San Francisco that cases of yellow fever have occurred at Mazatlan, in Mexico.—**Small Pox.**—This disease still lingers in New Orleans, there having been nineteen deaths from it reported during the week ending the 18th of August. Since our last issue we have observed nothing new concerning the progress of the cholera in Egypt, except that it has so far subsided that the quarantine restrictions have been removed along the Suez Canal and commerce restored. —Editorial, THE JOURNAL, vol. 1, Sept. 8, 1883, page 279.

News Note.—At Hoosick Falls, N. Y., Dr. F. R. Hudson was shot and seriously wounded last week by a man whose wife he had declined to visit.—THE JOURNAL, vol. 1, Sept. 8, 1883, page 281.

A Comparison of Antiseptic and Non-Antiseptic Methods in Surgery.—Antiseptic methods may be grouped under three heads, and may be discussed as they are applied by the three men who have been their leading advocates. Every one has read and heard so much of the minute care, which Mr. Lister takes in the use of antiseptics, that a description of his method would be superfluous. Those who have seen him operate, however, know how rare it is to see an amphitheater in which his precautions are followed with any approach to his perfection. . . . The most prominent feature of Mr. Lister's system being the spray, this was seized upon as the potential element in the securing of the antiseptic healing of wounds, while the other details of the method, which are based upon the absolute cleanliness of everything that is to come in contact with wounds, have been neglected. That the spray is not a necessity, and that it is the other details that are important, may be shown by a short description of the methods of Prof. Volkmann, of Halle, Saxony, who has been the chief champion of antiseptics in Germany. He secures antiseptics by the flooding of wounds. The floor of his amphitheater is covered with marble, and has an opening in the center through which water runs away. During operations, the wound is flooded every two or three minutes from a can resembling a watering-pot for flowers, held perhaps two feet above the wound, that the force of the solution of carbolic acid falling upon it may thoroughly wash away any septic matter that may chance to rest upon it. . . . The great disadvantage of the method is the fact, that the drenching of the wound with carbolic solution wets both operator and floor, and is extremely disagreeable. . . . So far as all precautions in operating are concerned Prof. Billroth's methods correspond almost entirely with Prof. Volkmann's, except that he does not flood wounds so constantly nor abundantly. He does, however, wash them thoroughly. At first he used for washing 1-40 carbolic acid. It is my impression he may now use only water. The essential characteristic of his method is, that in fresh wounds he dusts the wounded surfaces thoroughly with finely-powdered iodoform. . . . The difference between this method and that of Lester (sic) is, that while Lester's might more properly be called aseptic, preventing the entrance of germs into a wound, Billroth's might be called antiseptic, disregarding the entrance of germs into a wound, but destroying them by an antiseptic, which, continuing to act for a long time, constantly prevents any septic process occurring.— Dudley P. Allen, M.D., THE JOURNAL, vol. 1, Sept. 15, 1883, page 292.

Medicine and Agriculture

Charles B. Shuman



The story of the rural doctor battling his way through wind, rain, and snow over nearly impassable roads to a farm sickbed typifies the service of the medical profession to agriculture during the last 75 years. The more recently broadened concept of rural medical service and the interrelationship between the business of farming and the medical profession opens up an interesting area for speculation as to the future. I will try to briefly examine these areas of mutual interest—the rural community, food and health, and the relationship of government to farmers and doctors.

The Doctor in the Rural Community

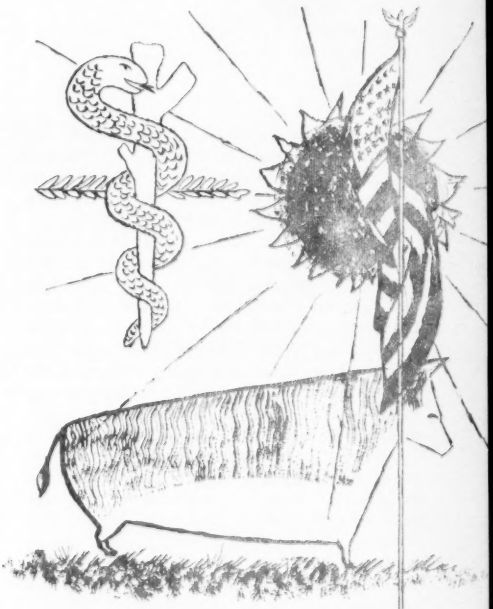
Today the rural doctor serves his community in many ways, both professionally and as a citizen. In the same manner, farmers and other members of the community have a new sense of responsibility for health and medical care. Farmers have organized and promoted thousands of Blue Cross and Blue Shield units, thus increasing materially the use of hospital and surgical service by rural people. When the shortages of hospital and surgical facilities became acute, local farm bureaus and other farmers' groups actively worked to solicit the funds for new construction. In many rural communities too small to support a hospital, local people have helped finance clinics for their doctors. Gradually, but surely, farm families are chang-

ing their concept of health from that of merely curing the sick to the realization that preventive medical care and concern for community health are of equal importance.

A few years ago the trend toward specialization in medicine reduced the availability of general practitioners for service in rural areas. In Illinois, the Illinois Agricultural Association (the state farm bureau) and the Illinois Medical Association recognized this danger and now jointly finance and administer a scholarship loan fund for students who will agree to return to practice in a rural community where a doctor is needed. This program has been an outstanding success, as measured by the number of young doctors locating in deficit areas and also by the close cooperation that has been stimulated between the two organizations at state and county levels. More recently, several state farm bureaus have initiated similar programs to encourage the training of nurses for service in less populated areas.

Another area of mutual cooperation has been in activities to promote farm safety. State and local farm safety councils and committees have been formed with the active support of both farm and medical organizations. By its nature, farming is one of the most hazardous occupations in the United States. Increased activity is needed to develop safety consciousness in farm workers and to reduce the incidence of accidents. These and many other activities to promote better health in the rural community are a reflection of the increased sense of civic responsibility that has caused farmers and doctors alike to become more active in local affairs.

Many rural doctors own or operate farms and thus have a good knowledge of the technical revolution that is taking place in agriculture. Occasionally, we hear expressions of concern from those who are not close to the rapidly changing farm scene but who fear that the family farm will be replaced by giant factory-type corporations. It is true that the number of farms is decreasing as increased mechanization makes larger family operations possible. However, there has been no increase in corporation farming—the family farm is secure. As the number of full-time farmers has decreased, there has been a corresponding increase in the number of part-time farmers and rural residents. These folks are employed in a wide variety of occupations, and, thus, the rural doctor of today serves a diversified community. Both his opportunities and his responsibilities have been broadened.



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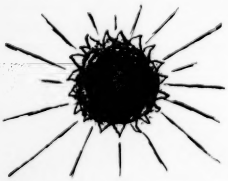
Food and Health

The farmer's business is the production of food and fiber. Under the stimulus of unwise government price-fixing schemes, we have produced a great surplus of certain kinds of farm products. At the same time, we in agriculture have failed to take full advantage of our potential markets. We are the best-fed people in the world, yet serious diet deficiencies endanger the health of many persons. Recent studies indicate that the diet of 29% of the people in the United States is deficient in calcium. Nearly one-third of the people either skip entirely or eat an inadequate breakfast—the body wake-up meal



that is so important for good health. It is widely recognized that good food and a well-balanced diet are essential to good health. Why, then, do we have these and many other nutritional shortages in the diets of so many folks?

Low income is not a major factor, since nutritional deficiencies are practically as common in high-income families as in those with less to spend. Carelessness and lack of accurate information are perhaps the major causes of the trouble. The recent National Food Conference was the first concerted attempt of farmers, the food industry, and civic and professional groups of all kinds to bring public attention to a new and important slogan—"Food Comes First." Unfortunately, it will require more than conferences and slogans to correct the deep-seated prejudices, habits, and indifference that influence our eating habits. Admittedly, farmers have a certain amount of self-interest in consumer acceptance of good nutrition. However, the human stomach will hold only so much food, and we are now eating at or near maximum capacity. The greatest benefit to food producers from a successful effort to improve human nutrition will come from a longer life expectancy. Yes, we farmers want our customers to enjoy a long and healthy life span.

Doctors, both rural and urban, are the diet and nutritional advisors to most of our customers. We farmers hope that the advice given is based on fact, not fad or fancy. Unfortunately, our research-based knowledge of human nutrition is inadequate. Some of our medical colleges place insufficient emphasis on nutrition. We know more about the dietary needs of hogs and chickens than of human beings. The fact remains, however, that we are not adequately applying our present knowledge. Our schools, colleges, and information media can materially assist in disseminating factual information. The medical profession can assist farmers materially and improve the health of their clients by making use of the new and important nutritional knowledge that is available. Doctors can help destroy such damaging and false notions as the often repeated statement that pork is hard to digest—actually, it has been proved to be one of the more easily digested protein foods for most persons. Doctors rightly resent the dangerous panaceas offered by medical fakers and cranks. Farmers are equally concerned with the damage being done by food fads and crazy diets. We will welcome the assistance of the medical profession in bringing food facts to the people.

Farmers, Doctors, and the Government

For more than 25 years, we in agriculture have been experimenting with a variety of government programs designed to legislate prosperity into agriculture. These attempts to fix prices at profitable levels and to regulate the production of certain crops have largely failed. We have learned that economic forces cannot be denied by political action, as surpluses have piled up, substitute products have captured our markets, and farm prices and income have gone down. The American Farm Bureau favors policies "which will make it possible for farmers to earn and get a high per family real income in a manner which will preserve freedom and gradually eliminate government regulation of individual farming operations." In other words, we are as strongly opposed to a socialized agriculture as medical people are to socialized medicine. We are ready to cooperate to oppose both threats.

There are basically only two kinds of economic organization for society between which we may choose—capitalism or socialism. Capitalism is private ownership and control of property and business, while socialism is state ownership or

control. Many of our government farm programs are socialistic in nature; they replace individual initiative and responsibility with bureaucratic decisions on the use of private property. Those in the United States who wish to change the country into a socialistic state work constantly to reduce the areas for voluntary, individual action and favor increasing the authority of government to make decisions. Security is their slogan, but the destruction of private property rights is their real goal.

Farmers believe that much of the success of the American experiment in self-government is due to the relatively high degree of political, religious, and economic freedom which we have enjoyed. Farmers, doctors, factory workers—all of us—have had incentives to work and save. If those who advocate the welfare state prevail, incentives will be destroyed; we will share equally in the poverty and political slavery of a socialist dictatorship. If we are to successfully oppose this very real threat, we must learn to identify both the avowed socialists and their innocent but misguided supporters. We must aggressively oppose all legislation that moves us farther down the road towards big government direction of the individual. Some of these areas, in addition to proposals to socialize agriculture and medicine, are transfer of state responsibility to the federal government, further inflation through deficit spending, increases in social security and minimum wages, huge federal public power projects, increased federal aid and control for public schools and roads, and artificially low interest rates to discourage private investment.

Yes, agriculture and medicine have many common interests. But most important of all is the interest in continuing a successful free competitive capitalistic system. We can succeed in checking the drift toward socialism if we have the will to work and stand firmly for those principles which have proved sound.

Charles B. Shuman
President, American Farm Bureau Federation

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Letter of Pasteur.—The French government has authorized Prof. Pasteur to organize a commission to investigate the causes, character, and treatment of cholera in Egypt, and has made an appropriation of 50,000 francs for that purpose. . . . The "*Temps*" publishes the following letter of Monsieur Masteur, in reply to the many inquiries addressed to him in regard to the instructions he has given to the *French Commission on Cholera in Egypt:* "I have indicated to the members of the French mission on cholera the precautions they have to take against the causes of contagion. These measures are instituted on the probable, though not certain hypothesis, that cholera does not enter the human organism through the respiratory track, but solely through the digestive organs, unless it be under some very exceptional circumstances: 1. Do not make use of potable water in any locality where the mission make their investigation, without having previously boiled it, and then well agitated it on cooling for two or three minutes, in a bottle half filled and well corked. . . . 2. Make use of wine which has been heated in bottles at 50 or 60 degrees, and drank out of 'flambés' glasses. 3. Make use only of well cooked aliments. . . . 4. The bread cut in three slices, which slices have to be subjected to a heat of 150 degrees for about twenty minutes. 5. All table and kitchen utensils have to be subjected to a temperature of 150 degrees or more. 6. Table, bed, and toilet linen must be plunged in boiling water and then dried. 7. Water used for scullery or anywhere about the house should have been boiled and after cooling 1/500 of thymic acid (one liter alcoholized water to two grammes of acid), or 1/50 (one liter in twenty grammes) of phenic acid added. 8. Wash hands and face several times a day with boiled water, with the addition of a little thymic or phenic acid. 9. When cadavers, or linens soiled with choleric dejections are to be handled, use a small mask over the mouth and nostrils, made of two fine metal wire disks, between which place one centimeter thickness of cotton wadding, previously subjected to a heat of 150 degrees; the heating to be renewed at every new contact with infected material."—Domestic Correspondence, THE JOURNAL, vol. 1, Sept. 1, 1883, page 250.

The Pulse After Hanging.—On the 23rd inst., Andy Taylor was executed or hanged at Loudon, Loudon County, Tenn. Being one of the physicians appointed to be present at the execution, I took the following notes: Pulse after the rope was adjusted, 121; first minute after the drop, pulse 54; second minute, 52; third minute, 39; fourth minute, 20; fifth minute, 0; sixth minute, 70; seventh minute, 73; eighth minute, 0; ninth 34. After this no pulse was perceptible; neck not dislocated; died from strangulation. The heart beat the nineteenth minute one time, and two or three times only from the ninth to the nineteenth, when life was extinct. No priapism produced. Drop fell at 3:15 p. m.; the body was cut down in thirty minutes. I send you the above items, thinking that they would be of some interest to the profession from a physiological standpoint.—John B. Blankenship, M.D., Correspondence, THE JOURNAL, vol. 1, Dec. 8, 1883, page 658.

Medicine and Communication

Anniversaries almost always suggest a contrast between today and the past. In retrospect, life seems to have been more predictable then than now. Events seem to have moved with less speed. Inventions, discoveries, and innovations did not seem so to crowd upon one another that there was scarcely time to measure the impact of one before another of equally massive implications came along. Since we live today in a period of fast-moving scientific and technical advances, at times we probably yearn particularly for a less hurried pace in science and technology.

Seventy-five years ago, vol. 1, no. 1, of THE JOURNAL, however, appeared in a decade unmatched, before or since, for its swift succession of discoveries and inventions that permanently revolutionized men's lives. The 1880's saw the introduction of the long-distance telephone, the invention of linotype, the discovery of photoelectricity, the launching of naval submarines, and, in rapid succession, the invention of motion pictures, the small internal combustion engine, the automobile, and the pneumatic rubber tire. Virtually every material advance made since then had its roots in one of the technical breakthroughs of that crowded decade.

Even if we narrow our interest only to the medical discoveries of the 1880's, we must conclude that THE JOURNAL arrived not a moment too soon. In 1880, Charles Laveran discovered the malaria germ and Karl Eberth identified the typhoid germ. A year later, Louis Pasteur came to an orderly revelation of principles of immunization through vaccination. In the next year Robert Koch discovered the tuberculosis germ. And in 1883, 1884, and 1885, there were successively the identifications of the diphtheria germ by Edwin Klebs and the cholera germ by Koch and Pasteur's development of inoculation against hydrophobia.

The tremendous significance of these giant strides that characterized medicine at the time of THE JOURNAL's founding can be adequately appraised only if we remember that in 1883 one out of every five deaths in Massachusetts was due to respiratory tuberculosis or diphtheria, compared to one out of every 113 deaths in America in 1956. The events of the medical world that THE JOURNAL was called upon, from its beginnings, to report to the profession were, therefore, of commanding importance. In an era strong in discovery and energetic in research, THE JOURNAL helped to fill a dangerous void—that of communication, which was the weakest spot in the scientific world of the 1880's.

Every discovery that has been made in medicine—as in any science—and that has been put to the service of man has resulted from a whole succession of scientists building upon the accumulated discoveries of others. When the time came for its practical application, it was neces-

sary for even more people in a wider area to know about it. This presupposes communicating every newly discovered bit of knowledge, first to other specialists in centers of research, then to general practitioners everywhere, and finally to the whole public.

At the time that THE JOURNAL was born, and for years before, the gap between discovery and communication was tragically wide. Early in the 1860's, for example, Pasteur announced his discovery that microbes could cause the spoiling of meat. We know now that the German physiologist, Theodor Schwann, had made exactly the same discovery a generation earlier, in 1836. This lack of adequate communication within professional circles meant needlessly repeated experimentings and gropings toward knowledge already arrived at and long since demonstrated. It meant that the point of departure of one scientist was far behind the point of arrival of another. It meant that, instead of building on what was already known, scientists spent precious years in rediscovery.

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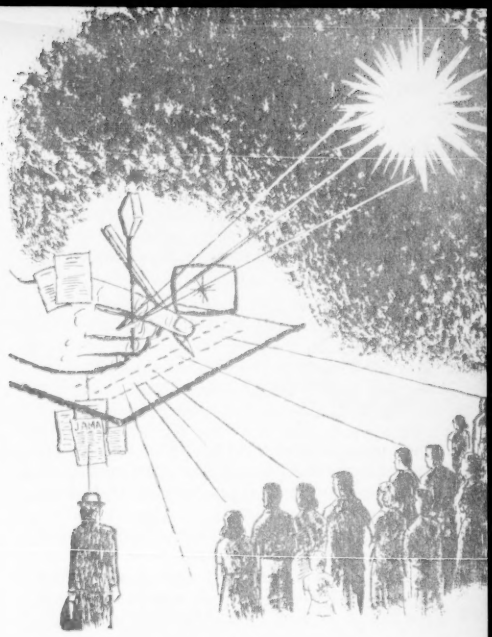
It meant, also, life-wasting delays in the broad application of new cures and preventives to diseases that contributed heavily to the mortality toll everywhere. The death rate from typhoid in 1896, the year that Sir Almoth Wright introduced the inoculation, was 28.3 per 100,000 in the state of Massachusetts, and two years later it had been reduced only to 24.7. On the other hand, in 1954, the year that the Salk vaccine for poliomyelitis was introduced, the death rate for that disease was 0.08, and by 1956 it was cut in half.

As a corrective agency in all this, THE JOURNAL began where it should have begun and where the need was greatest: in reporting to the entire medical profession in America the major developments in medicine, not only here but all over the world. I do not see how it is possible to overemphasize this function of professional journalism. Without it, the uncertain dissemination of knowledge from the scientists to the general practitioner would be inconceivably wasteful in its slowness and vagueness.

Today communications within the medical profession are constantly improving. The profession has moved with speed and wisdom in adapting new communications techniques to its special problems and opportunities. In 1953-1954, the American Cancer Society joined with Columbia Broadcasting System (CBS) in a series of 20 closed-circuit color television programs, in seven cities, called the Physicians' Conference on Cancer. The programs were professional seminars, lasting over an hour and a half each, discussing and demonstrating diagnostic, surgical, and medical techniques in the discovery and treatment of cancer. Physicians in seven cities, far too busy to leave their practices to go to distant cities for clinical studies, were able simultaneously to consult with top specialists, to see the progress of treatment of actual cases, to witness operations. Today television recordings of the series are being used in medical schools and hospitals as a teaching aid, making it possible for all medical training centers to share the talents and inspirations of one another's great teachers, surgeons, diagnosticians, and researchers.



But, although it begins with the profession, the problem of medical communications does not end there. The progress of the medical profession in its essential task of saving and prolonging human life is inevitably dependent in considerable measure upon public awareness and understanding of diseases, their control, and

their cure. This requires a working alliance between the profession and those mass media that can reach the general public—and must sometimes reach it very fast.

There are times when this is a life and death matter. In 1947, for example, New York City suddenly found itself in danger of a smallpox epidemic, when the disease was brought into the city by a traveler from Mexico. It was necessary to get a major part of the population of a city of millions inoculated as swiftly as possible. An epidemic never got started, because every broadcaster and every newspaper in New York impressed upon the community the gravity of the situation, and the public responded promptly, with 2,500,000 who had not been vaccinated within five years getting vaccinated within three days.

Last year a less dramatic situa+ion occurred with the Asian influenza invasion. Public knowledge of what the disease is, its common symptoms, and what to do about it was of major importance, not only because it enabled people to recognize the disease and take the vitally important first steps in its control but because it relieved pressure upon overworked physicians and hospital staffs from worried and puzzled victims. As a result of an almost continuing flow of information, both on news broadcasts and on special programs, the public was able to cope with the situation, and it was kept within manageable psychologica! proportions for the profession to deal with it in a way that permitted the most effective use of available medical and hospital facilities.

This kind of service to the public was the direct result of the medical profession and the broadcasters acting in league with one another. There are few areas more dangerous in mass communications than medicine and none in which it is more essential that communications work in close alliance with another profession. A broad lay public, involving all age groups and all levels of education, has no built-in safeguards for the proper interpretation of highly specialized scientific news. Great segments of such a public can very easily be overalarmed or overencouraged about developments in medicine. The only way that this danger can be minimized is by the close working of communications and medicine on the substance of broadcasts involving medicine. At CBS, we have had repeated examples of how well such cooperation has served both the public and the profession.

In 1956, for example, CBS undertook the first program in television history in what is perhaps the most difficult area of medicine about which to communicate with a large audience—mental health. Although the problem of mental health directly affects three-quarters of a million Americans and, indirectly, millions more, a great heritage of attitudes, impressions, and sensitivities has made it extraordinarily difficult to discuss it with a mass audience. Our experience in producing the program in cooperation with the American Psychiatric Association and the National Association for Mental Health demonstrates that, done properly, such a program can be successful and immensely useful. "Out of Darkness," an hour-long documentary presentation of the progress of a catatonic schizophrenic through intensive psychotherapy, not only conveyed to millions a realistic but hopeful picture of progress in what has been one of the darkest areas of illness but also stimulated an increased public awareness of the dimensions of mental illness as a public health problem and aided in mobilizing funds to support research and treatment.

In 1954 there was a major job of "hard news" to do in communicating valid and responsible information on the Salk vaccine. Poliomyelitis and its tragic consequences—although ranking relatively low among the incidences of disease —had long had a strong emotional hold on the American people. It had also such special dramatic characteristics as striking at little children, leaving easily envisioned physical damage, and invading indiscriminately homes of all educational, economic, and sanitary levels. Moreover, efficient and well-run publicity campaigns to support research and treatment had sharpened a sense of helplessness in the face of onsets of polio epidemics. The whole atmosphere was

such that any major development in treating or preventing the disease was bound to be seized upon eagerly by virtually all the public.

In some ways, such an awakened interest can be as hazardous as public indifference. During the uneasy days when the mass production of the vaccine was going through necessary stages of trial and error, there were the twin dangers of overconfidence and overcaution. Those in nonspecialized communications could inadvertently contribute to either extreme. On the other hand, the subject was of such pervading interest that no general news medium could possibly ignore it until there was the more absolute information that only time could bring.

As a result of this public interest, the Salk vaccine dominated the news broadcasts and involved even "special event" broadcasts of radio and television for days. On the whole, public reaction was excellent. People not only got the story, often as it was developing, but also got new insight into the slow process by which medical innovations must be tested and tried and proved. They found out something of the complexity of the war against disease and of the long and difficult steps between the first use of something new and the ultimate wide application of it.

People also know more about the battles medicine is waging and winning because of special broadcasts which draw attention to significant new work in the medical field. The CBS Television Network series entitled "The Search" devoted 27 programs to important research projects. Among the series' special reports was one made in cooperation with the Hearing and Speech Center of the Johns Hopkins University School of Medicine, which explored the early diagnosis and treatment of deafness; another was a thorough-going research project looking for the factors that cause heart disease, directed by Dr. Ancel Keys; and another, made in cooperation with the Institute of Physical Medicine and Rehabilitation of New York University–Bellevue Medical Center, probed the problems of physical rehabilitation.

The current "Conquest" series, which is being presented in cooperation with the American Association for the Advancement of Science and the National Academy of Sciences, focuses on man's advances in various scientific fields. In recent months this program has brought to millions of families reports on such developments as "open heart surgery," performed by Dr. C. Walter Lillehei and his medical team of the University of Minnesota, and the remarkable research on viruses being conducted by Dr. Wendell Stanley of the University of California.

Aside from the necessary function of reporting the news as it happens in the medical field, the medical profession and mass communications must work together continually to broaden public understanding of the whole content of medical practice in America today. The generation of this kind of understanding goes far beyond news programs alone. THE JOURNAL pointed out in its issue of May 4, 1957 (p. 49):

> "In both fiction and fact presentation, the voice and face of medicine today are emerging more intimately before more people than at any time in the history of the world. Independent radio and television stations in every region of the country, cooperating with local medical societies, are finding vast and eager audiences for medical shows woven in such varied format as music, interview, drama, panel discussion, question and answer, demonstration, and individual reporting. Network-wise, there was an average of only two medical stories a week on television a year ago, playing to less than 10 million viewers. Now, industry sources report, there are eight or more medical-line television shows weekly, having a combined national audience of at least 50 million."

All this has not come about by way of force-feeding the public. It has come about because the public is interested. We in the mass communications media have the responsibility of meeting that interest with material that is interesting, timely, and authoritative. This we can do only by working in league with the profession, its societies, and its institutions. Thus, by extension, we can share in the positive and invaluable role of THE JOURNAL through its long history, bringing to the public the same kind of interest and authority in medical reporting that THE JOURNAL in professional terms brings to its 200,000 readers within the profession.

Frank Stanton
President, Columbia Broadcasting System, Inc.

Dedication

John Steinbeck

The great critic Boileau said long ago that the only figures worthy of Literature are Kings, Gods, and heroes. For today we must substitute for heroes those people who break free of a constricting pattern, who overcome insuperable difficulties, or who with inner courage or gallantry or determination resist pressures or drive through opposition or difficulty to a desired end. These are the heroes of our time—even if they try desperately and fail—these, it seems to me are the raw material of Literature.

A wise and cynical friend of mine handicaps life as seven to five against. I think he is largely right, but when horses or men buck the odds and win—we have champions and we also have Literature. Perhaps also it reassures all of us that neither odds nor gods are all powerful.

I think I have a good example of this in the creation of a doctor. I have watched it happen year by year, and it makes me a little impatient with the despairing cries of lost or beat generations who lose before they have laid down a bet.

Next door to my little house in New York there is a newsstand and store so tiny that when two people go in at once they have to move sideways. It is run by a family named Spivack—Mr. and Mrs. Spivack and their son and their daughter. They sell newspapers and magazines, tobacco, candy bars, cards, string, soda, ice cream, paper clips, glue. The margin of profit is small—the hours incredibly long. At five in the morning the stand is open for the morning papers. At midnight it is still open for the late editions. It is closed only Sunday afternoons. That is 19 hours a day, and closing Sunday noon it makes 121 hours a week. One member of the family is on duty all of the time and two during rush hours.

In addition to the work, there is the family to maintain, an apartment to keep, meals to serve, beds to make, laundry, cleaning, social life.

Starting as customers, we have become friends of the Spivacks, and we have been privileged to observe a dogged, gallant, undeviating miracle—for this family with the odds much higher against them than seven to five have created a doctor.

His mother says that Morty wanted to be a doctor from the beginning. There was never any defection toward cowboy, soldier, pilot. It was medicine from the beginning. Medicine was simply a fact, an inevitability. The family, the newsstand constituted itself a creative organism. Morty got good grades in high school, but that also was a fact of nature. He did his studying behind the counter between customers.

And then came the time for him to go to col-

lege—he went to Cornell. This meant, of course, longer hours for the remaining three except during vacations when Morty took his shift again with his textbooks behind the cash register. They gave him the slacker times when fewer customers interrupted his work.

Then an accident happened. The building changed hands, and the little store ceased to exist. The Spivacks moved their papers to the front of a butcher shop on Third Avenue and held on. It was over a year before they were able to move into another place next door to their old stand. But the process of creation continued uninterrupted. Morty went into premedicine, came home, studied behind the counter. The family functioned. The unit was unbroken.

When Morty graduated from Cornell with honors, it was not unusual. It was inevitable. When he entered Buffalo Medical School, there wasn't much time to sit behind the counter.

You can think of this family as a preset engine aimed at medicine, except that people are not engines. There were debts, worries, illnesses during which the remaining three had to carry 121 hours a week. Everything that happens to people happened to them, wearines, sadness, endless work, sickness—all the matters which stagger people and sometimes destroy them. They did not have to contend with neuroses. They hadn't time—unless you consider what they were doing a neurosis, which it probably is.

The family functioned—the apartment was kept and cleaned, meals cooked, social life, one step at a time, and the time forever. We have known the Spivacks quite a while now, and we have never heard a complaint nor a doubt—and as for self pity, who has time for it?

Recently Morty received his degree in medicine, head of his class, and was awarded A. O. A., and that's about as good as you can get, I guess. He will intern at a New York hospital in his long-ago chosen field of thoracic medicine. It isn't over of course. It never is, but the cards are down.

The family isn't exactly proud because they never doubted that it would be this way—odds or no odds. There's a glow in the newsstand, surely, but it opens at five in the morning and closes at midnight, and if there is any family celebration, it will have to be on a Sunday afternoon.

Perhaps after all the odds were not against the Spivacks. Given the unassailable determination of every unit of this family, an all-wise handicapper might have considered them 10 to 1 in favor. I doubt whether you could beat an outfit like that, short of bombing it. And that is Literature.

John Steinbeck
Author

Magazine and Book Publication

DeWitt Wallace

One of the noblest passages in literature is the Hippocratic oath. And Americans can be thankful not only that almost all their doctors abide by these ancient precepts but also that they strive to keep up with the bewildering multiplicity of advances in modern medical science.

All of us laymen have known doctors personally, and all of us know that their jobs are as demanding as any in the world—combining hard work, long hours, professional knowledge, and an understanding of the personal quirks and peculiarities of their patients. Perhaps that is one reason we laymen are so interested in these devoted human beings, our doctors, and in their work. Another reason, of course, is that we are all interested in staying alive and in avoiding pain if possible.

Over the years, we at *Reader's Digest*—and, of course, the editors of other magazines—have found a particularly active response on the part of readers to articles which deal with medical subjects. Some may be biographical, recounting the lives and achievements of such men as William Osler or Harvey Cushing or the inspiring accomplishments of such medical missionaries as Sir Henry Holland or Albert Schweitzer. Some may be about hopeful technical or organizational developments: a heart and lung pump for use in certain operations or a better

system of blood banks. Some may report, after careful investigation, the advent of treatments for those ill with various diseases.

Such articles, arousing reader interest as they do, admittedly impose an added burden on our doctors. Often they are overwhelmed and besieged by patients—many of them desperate—who have just read of some treatment and feel that they should have it, willy nilly. This imposes a double responsibility on us, as editors: the treatment should be available, and it should be within the power of the family doctor to use as soon as the originators can show him how to use it safely.

We believe, despite our having caused embarrassment to the already busy doctors, that over the years medical articles in popular magazines have performed valuable services. They have helped to bring out into the open such once-hushed-up diseases as syphilis, cancer, and tuberculosis, thus encouraging early detection and treatment. They have tried to explain, necessarily in lay terms, some of the recent great advances in medical science, thereby giving readers at least a glimpse of the men at work behind their own doctors. Moreover, they have tended to introduce doctors to laymen as what doctors really are—unusually qualified and dedicated men and women—rather than as the mysterious priest-medicine men they were once often felt to be.

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We at *Reader's Digest* know that our physicians are almost the last of a vanishing breed—the free individual. We have been scrupulous to support the doctors in their fight to serve their patients in their own unselfish way, as individuals; and we have opposed attempts of government and do-gooders to socialize them.

On the basis of polls taken among doctors by *Reader's Digest*, we realize that, on the whole, doctors would prefer to have magazine articles on medical subjects written by M.D.'s. The *Digest* does, of course, publish many articles written by physicians. It has also published many which originally appeared in the A. M. A.'s JOURNAL and *Today's Health*. Furthermore, it is gratifying to the *Digest's* editors to learn from the polls mentioned above that—if the authors of medical articles must be laymen!—the writers preferred by doctors include those whose work appears in the *Digest*.

A comparatively young magazine, *Reader's Digest*, only 36 years old, salutes a great scientific publication, THE JOURNAL of the American Medical Association, upon the happy occasion of its 75th birthday.

DeWitt Wallace
Publisher of *Reader's Digest*

Sports

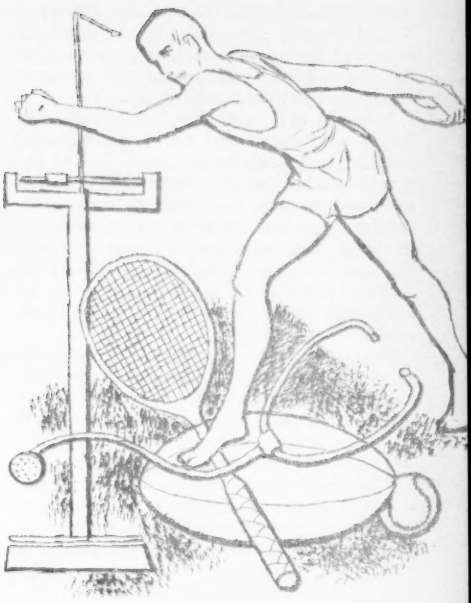
K. L. Wilson

Seventy-five years, when regarded statistically as milestones in the career of an individual, an organization, or a publication, such as THE JOURNAL, suggest venerability and longevity. However, when viewed as a period of development in the many fields of human endeavor, it seems a very short span of time in which to account for so many remarkable accomplishments. Thus, in reviewing the past 75 years of activity in the field of sports, physical education, and recreation, one can only be amazed at the great changes and advancements which have taken place.

A few comparisons of present-day achievements and the standards existing before the turn of the century offer evidence of the tremendous progress effected in the past 75 years. Take swimming, for instance. The world mark for the 1,500-meter event was then 29 minutes, 42 seconds; today it is officially recognized at 17 minutes, 52.9 seconds. The winning time at the Amateur Athletic Union (A.A.U.) 100-yard free style national championships in 1883 was 1 minute, 28 seconds, and the currently accepted world mark is 48.9 seconds, with scores of athletes breaking 58 seconds.

Almost every event in the bulky program for track and field competitors is subject to frequent revision in record performances, and comparisons with yesteryear seem ridiculous. High school athletes today, in average performance, surpass the standards which were earmarked as the best in the world 75 years ago.

For the 100-yard dash, the record then was 10.25 seconds; now it is 9.3. The time of 4 minutes, 30 seconds for the mile run was an eye-popper then; now the famed 4-minute mile has become almost commonplace, what with some



18 occasions on which that barrier has been surpassed. A toss of 43 feet was tops in the shotput; now prep athletes can't score unless they hit that distance. Three men in the world have surpassed 60 ft., with the record now standing at 63 ft. 2 in. A jump of 5 ft. 8 in. in the high jump and 11 ft. in the pole vault appeared to be the acme in 1883. Today the world mark in the high jump is 7 ft. 1¼ in. and 15 ft. 9¾ in. in the pole vault.

Seventy-five years ago, baseball was rapidly becoming the national game. After years of controversy, there began to be some semblance of order in the National League and the American Association (which later became the American League). In 1887, the World Series was most unique—a 15-game schedule, one game in each of 15 cities! From this barnstorming tour resulted $41,000 in receipts. Today the gross receipts from the sale of hot dogs, beer, soft drinks, peanuts, and popcorn alone will well exceed that total in just one World Series game.

Seventy-five years ago, football was just beginning to be advanced. It had been started in 1869, had had a stormy infancy, but was rapidly gaining in popularity in both the colleges and the high schools, although most of the play was confined to the Eastern colleges.

The ensuing years brought many of the star players from the East to the Midwestern and Southern schools, and these men quickly introduced the sport, acting as coaches, sometimes combining that assignment with that of actual participation as players. By 1905, however, the game had become so rough and dangerous that President Theodore Roosevelt issued an ultimatum that if such rough play was not immediately ruled out he would abolish the game. Corrective measures were promptly taken, and the game of football spread like wildfire throughout the nation. With the introduction of the forward pass and with the little squad of players from Notre Dame that played the great Army team at West Point in 1913, two of the sport's great figures emerged—Gus Dorais and Knute Rockne. These two individuals demoralized the heavily favored Cadets with their forward passing tactics, and Army was beaten 35-13. This great victory lent courage to the small colleges and demonstrated that the forward pass was the "equalizer" which would aid them in competing successfully against larger schools.

Today, football, although it still experiences "growing pains" in some of its concepts, is the great fall sport adventure for millions of Americans who follow the fortunes of their favorite

teams with exuberant interest. The speed and skill of the play, the quick reversals of advantage, and the colorful pageantry attendant to the game all have great appeal and vigorously express the American way of life.

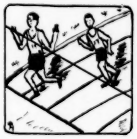
It was in 1891, well after THE JOURNAL had begun publication, that Dr. James Naismith fastened two peach baskets on the rim of the gymnasium balcony at Springfield College and so started the game of basketball. Today, in excess of 100 million spectators are in annual attendance at basketball games throughout America, and the game actually is considered the "national sport" as far as total participation by individuals and teams, along with spectator attendance, is concerned.

Most remarkable in reviewing the past 75 years of sports activity in America is the development of athletic programs in the elementary and secondary schools. Where the adoption of one or more sports came slowly in the early years, and then speeded up during the golden '20's and boomed in the immediate post–World War II era, there now is a mushrooming growth of sports interest and participation so fast and so great that any previous pace seems slow and feeble.

Since 1950, the number of elementary and secondary school children has increased 8,167,000. At the beginning of the 1956-1957 school year, there were 7,820,000 boys and girls registered in grades 9 through 12 in schools in the United States. This year, this total has jumped to 8,424,000—a one-year increase of 604,000 youths reaching the competitive sports age (8 to 18 years of age). The total U.S. school population (kindergarten through college) has grown from 41,366,000 to 43,135,000 for the 1957-1958 school year.

Increased school enrollments have forced many small United States schools to increase both interscholastic and intramural programs, particularly in the sports of basketball, football, tennis, track, and baseball. Nearly 500 million dollars in new facilities for athletics, physical education, and sports are now being constructed—an all-time high. Three-fourths of this plant expansion is in elementary schools, the remainder in secondary schools. In addition, there is an increase of competitive team sports on the junior high level in basketball, football, baseball, and track.

More students mean more sports on the school programs. Large schools are moving toward



30-sport programs, smaller schools toward 20. The biggest gains will be noticed in bowling, golf, wrestling, table tennis, roller skating, skiing, soccer, and tennis.

The phenomenal increase in the nation's 8-to-18-year-old population also has had its effect upon areas other than schools. Virtually every youth sports program initiated in the past five years on the teen-age level has boomed. Youth baseball has jumped from 500,000 participants during the summer vacation period to 2,200,000 last year. Midget football, junior golf and tennis, teen-age bowling, and many other youth activities are just starting to grow.

United States community recreation departments are becoming an increasingly important factor. More than 2,000 communities now boast year-round programs; 5,000 more have part-time schedules. Los Angeles, for instance, has a full-time recreation staff of 1,400 employees and operates over 50 recreation activities, with more than 35,000 youngsters playing youth baseball alone. The same is true of Milwaukee, Wis., San Francisco, Chicago, Houston, Texas, and dozens of other cities.

Winter sports activities also have felt this impact. Skiing, in particular, has never enjoyed so much popularity nor so much individual participation. Interest in skating has increased heavily, also.

There are many reasons why sport and recreational activities have increased so greatly and why standards of achievement in sports have continually risen to higher levels. Better equip-

ment and facilities, of course, have been a great factor. So has the tremendous increase in youth sports-age population, and the resulting participation naturally has widened the base of competition. Public recognition of the athletic achievements also has acted as a spur, and new goals are sought continually as the youth react to the challenge and surpass existing standards.

The spotlight has been thrown on physical education and competitive athletics in a most dramatic fashion in the past two years by President Eisenhower. He appointed a group of experts from many different fields to urge that everything possible be done to encourage the youth of the United States to higher standards of health and competition. The President has pointed out that every opportunity should be afforded to the youth of the nation to participate in competitive sports, that we must not lose the competitive urge that helped make this nation what it is. Leaders in physical education and athletic training have been asked to enlarge their programs and to give training not only to the good athletes but to everyone who can be persuaded to take part.

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The impact of this program already has been felt throughout the nation. Hundreds of towns and cities have expanded their schools and recreational facilities and are planning to institute programs where a youngster can compete in his own class. Not every boy can play football or basketball, but every boy and girl should have the opportunity and be encouraged to take part in competitive games of their own choice, where they can not only improve their health by beneficial exercises but, at the same time, learn the importance of team play and sportsmanship.

Most important, and sometimes overlooked, are the vital factors of improved training and coaching methods which have been aided greatly by medical research and, above all, medical supervision. Today, virtually all school athletic teams from junior high through college have a team physician. Practically no boy enters competitive sports, whether in park recreation contests, Golden Gloves boxing, Junior Olympics, or others, without his undergoing physical tests and having been pronounced able by medical authorities.

Proper diet now means something more than just a way of shedding weight. Every precaution is taken to safeguard the health and welfare of the athlete. Sports in America have made remarkable progress during the past 75 years, and thanks are due to the medical profession for the care and concern it has shown over these years.

K. L. "Tug" Wilson
Commissioner, Intercollegiate Conference
and President, U. S. Olympic Committee

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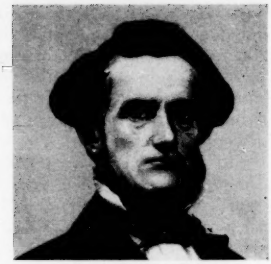
The Change.—At the recent meeting of the American Medical Association in Cleveland, it was decided with much unanimity to commence the publication of the proceedings and papers of the Association in a weekly medical journal under its own control, instead of in a volume of transactions, as heretofore. . . . The important step has been taken, and this, the first number of the new form of publication, is before its readers. It contains the minutes, or full record of proceedings of the general sessions of the Association during the recent annual meeting in Cleveland; the annual address of the late President, Dr. John L. Atlee, and a fair variety of other matter of interest to the profession generally. . . . We shall spare neither time nor labor to complete such arrangements as will make the JOURNAL an efficient representative of the scientific, social, and ethical interests of the whole profession. Thirty-two pages of reading matter each week will make two large-sized volumes for the year. We shall consequently need many original papers and communications. . . . To our confreres of the medical press from whom we have received so many kind and complimentary notices, we return thanks, with a cordial proffer of the right hand of fellowship, and of our best endeavors to promote the common welfare of all.—Editorial, THE JOURNAL, vol. 1, July 14, 1883, page 28.

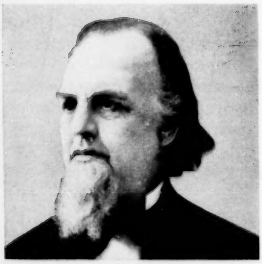
Notice.—A neat little medical periodical, called the *Polyclinic*, which does a part of the advertising for a circle of specialists in Philadelphia, recently headed its leading editorial with the announcement, "A Proof Reader Wanted!" Now, if our sprightly neighbor of the Quaker City really needs a "Proof Reader," we would kindly inform him that during the past few months we have had two or three connected with this office whose services are no longer needed, and we presume one of them might be obtained, provided fair wages were offered.—THE JOURNAL, vol. 1, Dec. 15, 1883, page 680.

EDITORS OF THE JOURNAL



N. S. DAVIS, M.D.
from
1883 to Dec. 31, 1888

JOHN B. HAMILTON, M.D.
from
Jan. 1, 1889, to Feb. 9, 1889
and from
June 24, 1893, to Dec. 24, 1898



JOHN H. HOLLISTER, M.D.
from
May 1, 1889, to May 13, 1891

JOSEPH C. CULBERTSON, M.D.
from
May 13, 1891, to June 24, 1893

TRUMAN W. MILLER, M.D.
from
Jan. 1, 1899, to Feb. 17, 1899

GEORGE H. SIMMONS, M.D.
from
Feb. 17, 1899, to September, 1924

MORRIS FISHBEIN, M.D.
from
September, 1924, to Dec. 1, 1949

AUSTIN SMITH, M.D.
from
Dec. 1, 1949, to date

A LITTLE explanation may clarify some of the dates on the opposite page. After serving about six weeks, Dr. Hamilton gave up the editorship on Feb. 9, 1889, and returned to the office of supervising-surgeon-general of the Marine-Hospital Service in Washington, D. C., where he had previously served for many years. Thereafter, THE JOURNAL was issued by the Board of Trustees' Committee on General Management, with the advice of former editor N. S. Davis, until May 1, 1889, when Dr. John H. Hollister, a member of the Board, was appointed "supervising editor." Dr. Hollister served as such until May 13, 1891, when Dr. John C. Culbertson was appointed editor, serving until June 24, 1893.

In the meantime, Dr. Hamilton had returned to Illinois, where he engaged in the practice of surgery and occupied the chair of Principles of Surgery at Rush Medical College in Chicago. "An almost universal acclamation summoned him to the editorship" again (THE JOURNAL, Dec. 31, 1898, p. 1576), and he served from June 24, 1893, until his death on Dec. 24, 1898.

Then Dr. Truman W. Miller of Chicago, resident member of the Board of Trustees, was appointed "to continue the conduct of THE JOURNAL business" until an editor could be appointed, and that was done on Feb. 17, 1899. The appointee was Dr. George H. Simmons of Lincoln, Neb.

After serving for 25 years, Dr. Simmons retired in September, 1924. Dr. Fishbein then became acting editor, serving as such until November, 1924, when he was appointed editor. Dr. Fishbein also served for 25 years, until Dec. 1, 1949, on which day Dr. Austin Smith, the present editor, was appointed.

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The Birth of THE JOURNAL

Johnson F. Hammond, M.D.

One of the principal interests of the American Medical Association ever since it was organized more than a century ago has been in the field of medical literature. The founders of the Association realized that without a record of significant and sometimes obscure clinical observations, therapeutic practices, techniques, investigations, and research, the profession would move forward slowly and scientific advancement on a broad front would be impossible. At the first meeting in Philadelphia in 1847, the Association made its position clear with the appointment of eight standing committees, of which one was the Committee on Medical Literature. The importance attached to this subject was emphasized by the appointment of a renowned physician, a widely known writer and teacher, Oliver Wendell Holmes, as Chairman of the Committee, and of other distinguished members, such as Austin Flint of Buffalo; G. C. Shattuck Jr. of Boston; Enoch Hale of Boston; John Bell of Philadelphia; W. Selden of Norfolk, Va.; and D. Drake of Louisville, Ky.

The new Association directed the Committee on Medical Literature "to prepare an annual report on the general character of the periodical medical publications of the United States, in reference to the more important articles therein presented to the profession, on original American medical publications, on medical compilations and compends by American writers, on American reprints of foreign medical works, and on all such measures as may be deemed advisable for encouraging and maintaining a national literature of our own."

In those early days, the Association held only one meeting a year and there were no A. M. A. periodicals. The scientific papers and committee reports presented at the meetings were assembled and printed in one annual volume. These books comprised the Transactions of the American Medical Association, a method of publishing which was continued for many years.

The First Report

The Committee on Medical Literature presented before the annual meeting of the Association in Baltimore in 1848 a report which covers 40 pages in volume 1 of the Transactions. Dr. Holmes and his associates reviewed all of the medical journals published in this country. Of interest is the fact that only one of those journals is being published today under the same name, the *American Journal of the Medical Sciences*. Also on that first list was the *New Orleans Medical and Surgical Journal*, which a few years ago was changed to the *Journal of the Louisiana State Medical Society*. The first American Medical Journal, the *New York Medical Repository*, began publication in 1797 and continued until there were 23 volumes.

Among several essays on "fevers of the country," mentioned in the first Committee report, an American work by Nathan Smith was said to be "worth more to an American practitioner than all the modern English treatises on fever put together." The Committee was of the opinion that "the part of our present medical literature most likely to reach posterity is in the form of fragmentary contributions to science rather than of any more formally and elaborately organized productions." Its members may have had in mind unusual case reports, which have always been, and still are, an important part of medical literature.

Periodicals Suggested But Disapproved

For the second annual meeting, which was held in Boston, the Committee on Medical Literature prepared a long report signed only by Chairman John P. Harrison of Ohio, although six other members, including Oliver Wendell Holmes, were on

the Committee. As directed, they reviewed the important articles and books published in the previous year and listed 35 foreign works that had been reprinted in the United States. There were 20 native and 4 foreign medical journals published then in this country, but the majority of them "sprung from the urgent determination on the part of the most energetic professors of the medical schools, to spare no efforts to promote that cause which they hold so dear." That seems to explain why the second annual Committee report recommended that the A. M. A. establish its own periodicals. "There is another measure calculated, we think, to encourage and maintain our medical literature. It is the establishment of one or more journals on the basis of a distinct department of medical science. . . . If a journal devoted to selections from French and German contributions to medical literature could be established, edited by some of our ripe medical scholars, we feel confident that it would succeed. Or if one devoted to Physiology and Pathology, or to either of the three practical branches, Practice of Medicine, Surgery, or Midwifery was commenced, final success would, we think, crown the enterprise."

Chairman Harrison asked for a special committee to consider this recommendation, and President A. H. Stevens of New York appointed W. E. Horner, Francis Condie, and Isaac Hays, who at the next meeting disapproved the recommendation. They said, "The profession in this country is scarcely prepared at the present day for the support of journals devoted to special branches of medical science." The special committee proposed another way to improve the literature: "RESOLVED, That in the opinion of this Association the only legitimate means within our reach for the encouragement and maintenance of a National Medical Literature, are to increase the standard of preliminary and professional education required of those who would enter the medical profession; to promote the circulation among the members of the profession of the medical journals of the day; to encourage the establishment of district medical libraries; and to induce every practitioner to cultivate, with care, the fields of observation and research that are within his reach." That resolution was adopted.

An amendment to the constitution was then proposed by L. A. Dugas of Georgia to abolish most of the 8 standing committees and to organize in their stead 15 other committees (vol. 2, p. 42). I. Hays of Philadelphia moved to strike out that part of the Dugas proposal which would abolish the Committee on Medical Literature and five other standing committees. The two proposals were laid over for a year when by vote the Dugas proposal was defeated.

Foreshadow of Council on Medical Education

Alfred Stille, Francis G. Smith Jr., T. H. Yardley, and J. B. Johnson signed the report of the Committee on Medical Literature presented at the Cincinnati meeting in 1850. This excellent report was notable for the high standards it required of editors and for its clarity of expression. They were critical of editors who used "labor-saving expedients" and of the writers who prepared the book reviews. This report contained suggestions that seemed to foreshadow the establishment many years later of the Council on Medical Education and Hospitals and higher requirements for entrance into medical schools.

The physician is apt to suppose, the Committee said, "that merely to describe what he has witnessed, or to explain his observations by some recognized principle, will entitle him to rank as an author, forgetting that, in order to render his description clear, and to apply to it directly some medical doctrine, he should be possessed of that command over language, and that familiarity with the processes of reasoning, which can seldom be acquired without a thorough liberal education. It is in the prevalent imperfection of the early education of our physicians that the principal cause of their inferiority is to be found. And this cause, it should be particularly remarked, is operative not only by withholding the necessary foundation for literary excellence, but in a still more striking manner by preventing that habit of literary culture, and that study of the masterpieces of thought in all departments of knowledge, by which the mind is

kept pure from the debasing contact of the world, and is enabled to ascend at will into a more intellectual sphere. Unless early studies develop a taste for mental pleasures, indifference to them may be expected to continue throughout life, and in the same degree will the habitual mode of thought and expression lend itself to the impression of outward and accidental influences." These ideas from the distant past, indeed this entire report, will appeal today to physicians who are especially interested in medical education.

This Committee recommended further that medical reading clubs be organized in communities where medical publications were not readily accessible. To encourage medical writing, they asked for authority to report to the Association at the next meeting the name of the most valuable American medical work published during the year and that it be formally proclaimed such by the President of the Association. They suggested that state and local medical societies offer rewards for the best work founded on original observation; that medical colleges distinguish the best inaugural thesis of every year by a public announcement; and that the sum of $100, raised by voluntary contributions, be offered in the name of the A. M. A. for the best experimental essay on a subject connected with physiology or medical chemistry.

The Prize Essay

Accordingly, a Committee on Prize Essays was appointed, and, at the Charleston, S. C., meeting in 1851, first prize was awarded to Dr. John C. Dalton Jr., of Boston, for an essay "On the Corpus Luteum of Menstruation and Pregnancy." The Committee on Prize Essays continued to function for years, and the winning essays were published in the Transactions.

On one occasion this Committee had more on its hands than it had bargained for in a surgical paper of vast dimensions—actually more than 1,200 pages. It was "utterly impracticable" for the Committee on Prize Essays to look through this elaborate paper, so they had it submitted to a committee of experts (Samuel Ashurst, S. D. Gross, and D. Hayes Agnew) who "thoroughly examined the same and found it in every way worthy of the prize offered by the Association." When the sealed envelope which accompanied this production was opened, the author was found to be Dr. H. Culbertson of Zanesville, Ohio.

Dr. Culbertson was a professor of ophthalmology in a medical college, but his essay was entitled "Excision of the Larger Joints of the Extremities." It began with brief references to the literature as far back as Avicenna, Hippocrates, Galen, and Celsus. The first chapter on excision of the hip joint included an enormous table which gave the names and addresses of 472 patients, by whom, where, and when the operation was performed on each one, the form of the incision, the extent of the bone removed, the amount of shortening in inches, and the number of months since the patient was last heard from. The same method of compiling tables was applied to operations for excision of the knee, the ankle, the shoulder, and the elbow and wrist joints. The total number of cases thus reviewed was 3,908. To obtain these data, Dr. Culbertson had written 3,000 letters to surgeons throughout the United States, asking for reports of their excisions.

In view of the financial situation at that time, the Association seems to have gone overboard in accepting this opus for publication and finally bringing it out as a very expensive, special 627-page volume of the A. M. A. Transactions (supplement to vol. 27).

Dr. Culbertson was paid the usual $100 cash award, and the printer was paid $5,958.69. When the other bills were paid, most of them comparatively small, there remained in the treasury of the Association a cash balance of only $172.72. That outlay was too much for the treasurer, who had been paying the bills for 22 years, and he declined to worry about them any longer. In fact, he declined reelection. During his long term of office, the cash balance in the treasury at the time of his annual reports had never exceeded $4,600, and two of them showed a deficit. His brief report as of June 1, 1876, follows:

> The Treasurer has the honor to report: That, under positive instruction of the Association, the prize essay has been published at a cost of some six thousand dollars; this unusual outlay, in addition to the annual volume of Transactions, leaves the treasury in an exhausted condition, as it has practically given to each member nine dollars in value for five dollars received; the details will be found on the opposite page.

In this his last report, after 22 years of service, it remains for the treasurer to thank the Association for its long-continued confidence, and to regret that, in leaving the treasury solvent, he cannot leave a more abundant surplus (Dr. Caspar Wister of Pennsylvania, Treasurer).

Voluntary Contributions

Now that "command performances" had been arranged for the 27 special committees to which subjects were assigned (vol. 4, p. 36), what chance for a hearing had a doctor who wrote a paper on a subject of his own selection? Those situations were to be resolved by a new Committee for Voluntary Communications, whose duty was to select papers which were deemed worthy for presentation to the Association. A prize was to be awarded for each voluntary contribution selected, provided the number of prizes did not exceed five.

At the meeting in Richmond, Va., in 1852, this Committee selected a paper "On Variations of Pitch on Percussion and Respiratory Sounds, and Their Application to Physical Diagnosis," the only paper chosen for a prize among 14 which the Committee examined. When the seal of the accompanying envelope was broken, there was the well-known name of Austin Flint of Buffalo, N. Y., to whom the prize was awarded.

Papers on Croup

For the annual meeting in Charleston, S. C., Thomas Rayburn and William McPheeters signed the report of the Committee on Medical Literature. Among the papers published between May 1, 1850, and March 31, 1851, they found a series on croup by John Ware of Boston published in the *Boston Medical and Surgical Journal*, which was "one of the best contributions on a subject connected with practical medicine that has ever appeared in our journals." They praised to a less extent papers from various journals on typhoid, malaria, smallpox, dengue, "congestive fever," milk sickness, and "malignant dysentery" and selected for brief comment certain papers on obstetrics, surgery, hygiene, pathology, and medical jurisprudence.

Such praise, however, was like a calm before the storm that suddenly fell upon the publications on therapeutics. "In no department of medical science," the Committee said, "have the publications manifested so little of the progressive impulse of the day, in none is the spirit of original investigation so little apparent, as in that of therapeutics." A book on materia medica and therapeutics received this comment: "Some of the facts set forth in illustration of its topics might be deemed puerile, and many of its passages wanting in dignity, were it not the evident object of the professor to be familiar rather than dignified, and impressive rather than formal. . . . Its rhetoric is not without any blemishes; indeed, in this respect, the writer has, through neglect of an art he well understands, done injustice to his own capabilities."

Delegates Tire of Long Reports

At Charleston, in 1851, the Committee on Medical Literature suggested that a new society or a section of the Association be organized to be exclusively devoted to the reception and discussion of scientific papers. It had been suggested that a scientific society like those in England and France would stimulate the genius, and arouse the ambition of students, and by encouraging rivalry among writers, elicit the production of scientific essays. The Association disapproved this suggestion and adopted another plan, which, as previously mentioned, was to appoint special committees, each to be assigned a subject for investigation and report. Nine of the subjects assigned concerned epidemics in various states; other subjects assigned to special committees were "the milk sickness," "permanent cure of reducible hernia," and "diseases of parasitic origin." It followed, of course, that the next volume of the Transactions (vol. 5) was filled with special committee reports and, not to be forgotten, a 207-page report of the Committee on Medical Botany and Materia Medica which listed all of the medicinal plants of the United States. Fortunately, perhaps, the Committee on Medical Literature did not present a report at the Richmond meeting in 1852. The delegates by this time had tired of long reports, and they voted that all future reports and scientific

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contributions "occupying more than 10 pages of quarto post manuscript" would be read only in abstract form before the Association.

Defects in the Literature

The New York City meeting in 1853 was held in the Bleecker Street Presbyterian Church, where the report of the Committee on Medical Literature was presented by Acting Chairman N. S. Davis at the request of the ailing Chairman, R. La-Roche. The 28 medical periodicals then published in the United States contained, during the year reported on, 2,387 pages of reviews and book notices and about 1,200 articles. Much of this material, the Committee said, was "of no value for want of fullness of observation and completeness of detail." In many of the journals, the book reviews were "unsatisfactory in the extreme, consisting of little more than a copy of the title page of the book with a single paragraph embodying a very general expression of opinion and that almost always of a commendatory character. . . . As a whole the review department of our medical periodicals is far more defective than any other. . . . This is much to be regretted, because few things contribute more to the elevation of the literature of any country or profession than the efficient discharge of the duties of the critic, in a spirit of justice, liberality, and candour."

The defects in the literature were said to be due to (1) deficiency of preliminary education, (2) absence of a clear and definite perception of the fundamental principles of physiology and pathology, (3) defective modes of investigation, and (4) too much haste in the preparation of matter for the press. The committee censured "the conductors of medical journals" who did not exclude "gross errors of composition and all unkind personalities from papers submitted to them; and for this much at least they should be held rigidly accountable by the whole profession." Nevertheless, the Committee closed its report "with the confident conviction that the literature of our profession has already commenced a rapid improvement, which is destined to continue until it attains an elevation and influence corresponding with the high social and political destiny of our country."

The standard of excellence for medical journals expressed in this report must have made a lasting impression, as 30 years later the acting chairman was appointed to be the first editor of THE JOURNAL of the American Medical Association.

Report of a One-Member Committee

Dr. S. D. Gross alone comprised the special committee appointed to examine the causes "which tend to impede the formation of a national medical literature." At the Detroit meeting in 1856 he said, "In a country so young which has had to toil so much for political existence, it is not surprising that the medical literature is in its infancy. . . . Ages elapsed before England, France, Germany, and Italy had even made a beginning in authorship. Nevertheless, medical institutions, medical societies, medical charities, and finally medical periodicals have sprung up in the United States in every direction and book after book has appeared until we shall soon cease to be able to count them."

The principal causes which obstruct the progress of medical literature were said to be (1) the identity of our language with that of Great Britain, (2) the disposition in the profession to patronize English works in preference to American, (3) want of independence in our periodical press, and (4) a lack of industry in observing and recording facts in private and hospital practice. Dr. Gross opposed the use of so many English textbooks in preference to those published in the United States. The editing of British works by American physicians was a practice so common "that it now amounts to a trade. . . . For fifty, a hundred, and two hundred dollars men may be found in almost every portion of the land, ready and willing to lend their aid and support to what the English press so constantly denounces as literary piracies. . . . If they possess intrinsic merit, they will be sure to find their way into the profession and to receive the favor and patronage to which they are entitled. If they do not, let them fall as they deserve stillborn from the American press. But whatever may be their fate, let us discountenance the humiliating custom of affixing our names to their title page, and of ushering them into notice under the seal and sanction of our influence."

The book reviews which had been criticized by previous committees again came under fire.

The reviews are written, with few exceptions, without taste and without point, as if the authors were afraid lest they should be accused of unkindness, harshness, or ill nature. They are characterized more by politeness than by a manly and independent tone, which is not afraid to utter its real sentiments and to affix the seal of its unbiased judgment. They are marked by none of the masculine vigor which is so well calculated to impart zest to the reader, and cause him to regret that he is so near the end of his task; which infuses life and spirit into a journal, and makes it a welcome guest at the table of the physician; which fashions and directs the dart, but blunts its point before it is permitted to strike its victim; which metes out equal justice to all men who come within its vitalizing, soul-stirring influence; which blends mercy with severity; which, when occasion requires, wounds but does not kill. It is a criticism which is neither alkaline nor acid, nor yet wholly neutral, but so nearly neutral as to render it impossible to determine its real character. It is jesting, good-natured criticism, which, for fear of doing mischief, or of being thought unkind, is bound in swaddling clothes, lest, by its sudden and inadvertent jerks, it should kick over the milk and water in the inkstand of the happy, self-complacent reviewer. In fine, it is an inert, a tame, a spiritless criticism; a criticism without body, without strength, without soul, deaf and dumb, and blind and halt.

Public Institutions Fail to Contribute

Hundreds of physicians then were on duty at eleemosynary establishments, and Dr. Gross asked what they had done for American medical literature.

Can anyone point to one solitary work, or any note of respectability that has emanated from their pen as the legitimate result and effect of the immense opportunities which they have thus enjoyed? . . . Some of the hospitals of our country have been in successful operation for upwards of a century and yet during all this time they have literally been as sealed books to the bulk of the profession. . . . Of the 120,000 patients who, we have supposed, are annually admitted into the various hospitals, asylums, and other charitable institutions of the country, at least 10,000 die. The bodies of many of these are doubtless examined but where are the records of the results? I am not aware that one solitary great and important paper on pathological anatomy has ever appeared in our medical journals from a pen from a hospital physician, surgeon, or accoucheur.

Dr. Gross urged that better use be made of the facts continually available at public institutions for the elucidation of the nature of diseases and accidents, and, indirectly, for the formation of an original, vigorous, and independent national medical literature.

Scientific Discussions at the Annual Meetings

N. S. Davis, at Philadelphia in 1855, expressed the opinion that the method of conducting annual meetings did not allow enough time for scientific discussions. He offered a resolution which would have divided the daily sessions into two parts: (1) the morning sessions to be given over to the Association's business affairs, and (2) the afternoon sessions which would be devoted exclusively to questions relating to the science and art of medicine. The Committee on Arrangements did not approve of Dr. Davis' resolution. It was

. . . reluctant to advise a departure from the present mode of laboring to promote a higher degree of culture in those preparing to become members of the medical profession, and to establish in those already engaged in its duties, a habit of recording the results of their observations. . . . Your Committee feel that the Profession has no right to rail at the public for misappreciation of it, so long as we continue to admit men into its folds destitute of that knowledge, both in nature and degree, necessary to make a decent appearance in general society, or to fit a man for the more ordinary and less responsible pursuits of life. . . .Thus far the influence of the Association has gradually extended itself into the rank and file of the profession. It has increased the number of writers, given an impulse to the medical mind, and encouraged a useful and laborious class, qualified to observe, and willing to submit their observations to the public, because they can be incorporated into the body of the Transactions without being subjected to a sifting criticism. It is true that, in this way, articles have been printed that did not always enure to the credit of the Association, but, at the same time, and by that means, motion and fertility have been given to minds that would have lain fallow and unproductive, which the dread of conspicuity belonging to a mental gymnasium would have driven into deeper obscurity. The Committee, however, whilst they would resist any tendency to radicalism in their own opinions, cannot dismiss the subject without expressing their belief that, in order to secure the objects of our organization, it is as necessary to increase the breadth and depth of its base as to elevate the shaft designed to spring from it, for without such preparation, the superstructure, however beautiful in aspect, would be of transient duration.

The Committee on Arrangements desired to be excused from submitting a distinct proposition on the subject. Since the Committee on Medical Literature had not presented a report for the last two

years, a discussion took place from the floor on the propriety of continuing committees that failed to make reports.

Is There a Remedy?

R. J. Breckinridge, J. B. Flint, and D. L. McGugin, who signed the report for the Detroit meeting in 1856, said:

> Some of our journals have teemed with articles, editorial and communicated, whose set purpose seems to be to depreciate to the last degree the extent of American medical scholarship, and the value and trustworthiness of American medical authority. From the dignified reporters of the Association to the silliest of anonymous scribblers, who bewail with grievous lamentations this national degradation; who declaim with fiercest invective against the pandering to foreign authors on the part of our medical readers; who [rise] with patriotic spleen into the regions of sublimated eloquence . . . there are those who see nothing but a dishonorable lack of nationality in the fact that we do not discard foreign authors merely because they are foreign, and welcome with affectionate embraces native ones merely because they are native. They sorrowfully complain of the unworthy condition of our literature, and consequently of the general demerits of our authors. We cannot, upon a calm review of the whole subject, add our voices to this melancholy chorus. On the contrary, we look with just pride upon our national literature even the medical part of it. . . . The least reflection will suffice to show anyone that, until recently, in this country, circumstances have been unfavorable to the prosecution of deep scientific investigation, or patient, prolonged, and philosophical research. . . . We have felled forests rather than studied great books. . . . Brave hearts and strong arms, incited by a restless activity, have founded an empire, vast in extent, mighty in power. The period of repose has not yet come. . . . The age of great scholars, and great writers, in our profession at least, may not yet have more than dawned upon us; but it has dawned, with the promise of a glorious day. . . . If other people, older in their nationality than we, choose to cast a slur upon our productions, and scoff at our efforts, let us remember that it is one of the prerogatives of age to condemn the inspirations of youth. . . . No depreciation of ourselves, and no impertinent sneers of others, can alter, in the slightest degree, our actual relations to the profession or the world. . . . What then can be done to correct the faults of our medical literature, however great or however small they may be. Is there a remedy? In the course of time and through the unchangeable laws of progress and development—Yes. Through the agency of this Association? No. If indeed it were able to prevent individuals yet in the "tenderest immaturity of knowledge" thrusting themselves forward as teachers; if it could make scholars of the ignorant and wise men of fools; if it would repress ridiculous ambition and boundless self-conceit; if it could persuade all writers to understand the difference between authorship and book-making; if it had the power to put down reckless plagiarists and shallow thinkers; if it could keep men from writing books by way of advertising themselves or their "schools"; if it could enforce a judicious excise on foreign importations, and wither that pestilent class of editors who "bring out" foreign works and divide glory with their authors, without sharing labor, or adding one jot or tittle to our knowledge of science and art; if indeed it had infinite power to do impossible things, it might hopefully attempt any necessary literary regeneration.

That explosion apparently was so devastating that the Committee on Medical Literature failed to report at the next meeting in Nashville, and its failure embarrassed the Committee which was to report at Washington in 1858.

Dawning in the East

Four years now had gone by without the kind of summary of the literature contemplated by the Association originally for presentation at the annual meetings. To supply the deficiency caused by the failure of previous committees would require a review of 1,400 back numbers of medical journals, and that the next Committee (A. B. Palmer, Chairman) declined to do. Even so, the report presented in 1858 did not want for substance. It filled 58 pages in the Transactions, with reviews of important contributions, a list of 66 reports of asylums, and lists of prize essays, native medical journals, and republications of foreign works. With apologies to such committee men as Holmes, Harrison, Stille, Reyborn, Davis, Gross, and Breckinridge, who already had thoroughly traversed this field, Palmer's Committee went on to discuss, again, "such measures as may be deemed advisable for encouraging and maintaining a national medical literature of our own." They concluded by reporting that, while far from perfect, the style of the contributions was constantly improving. But the book reviews had not improved.

> These notices, though sometimes flippant and censorious, tending to do injustice to authors by their misplaced severity, usually consist of the honeyed words of common-place eulogy which, according as it is understood, may do injustice to either authors or readers. In some instances, in looking over the accounts of the same work in several journals, the most opposite statements will be found. . . . Still there is usually a similarity of language used, not only in different journals, respecting one book, but in most of the journals, respecting all books. . . . The types which shadow forth such expressions as "No physician's library can be complete without it," "It should be in the hands of every student and practitioner," &c., might be

supposed never to be distributed. In stating these facts, it is by no means intended to pass a general sentence of condemnation on editors of journals. . . . The evil referred to will not be fully corrected until each journal has such a list of paying subscribers as will justify the disbursement of money for literary labor.

It cannot be too strongly impressed upon those conducting medical journals, that as their duties as critics are the highest, so none of their efforts will so much influence the character of our literature as those expended in this department.

The critic should be familiar with the subject of the work upon which he sits in judgment; should be acquainted with the past history and present condition of its literature; he should be capable of skilfully analyzing thoughts and arguments; should be able to distinguish between the substance of true logic and the shadow of sophistry; should be familiar with the different modes of expression, and have a thorough knowledge of the powers of language; and he should have the independence to dispense his opinions like the administrator of justice, with perfect impartiality—without fear or favor.

Nevertheless, the Committee was optimistic about the future. "The darkness which has hung over the literature is breaking away. There is at least dawning in the east, and though the chariot of day may roll on but slowly, the full effulgence will come at last."

Why No Bernards, Brown-Sequards, and Virchows

The Louisville meeting in 1859 adjourned without a report from the Committee, and the report for the next meeting in New Haven was signed by the "acting reporter," D. F. Wright of Nashville, since the Chairman, Dr. Henry F. Campbell, did "not have the leisure to devote to the subject."

Dr. Wright said that if the time covered by his report had commenced six months later, the American works published would have far outbalanced the European, both in number and in the "solidity of their labors." He posed: Why do we not have our Bernards and Brown-Sequards and Virchows in this country devoting their lives to the experimental development of the physiological sciences? Because there was no demand for that type of work, was his answer. "Our professors and lecturers are exclusively occupied with instructing undergraduates, with qualifying students for diplomas, while the audiences who listen to the great men we have above enumerated, are not students, but graduated physicians who desire further instruction in some specific department. . . . This particular type of educational requirement in the United States is a determining cause which gives our teachers (who are also our writers) a bias toward systematizing and utilizing already existing knowledge rather than the exploration of yet untravelled routes of investigation."

War Curtails the Literature

The American Medical Association did not hold annual meetings in 1861 and 1862 because of war between the states. In 1863 at the Chicago meeting, Charles A. Lee of New York reported for the Committee. He said, "So far as your committee can ascertain, there are but 20 original medical journals (including pharmaceutical and dental) published in this country; while at the commencement of the war there were at least fifty. No medical periodical, so far as known, is now published in any of the Confederate States, or even in any State that has formally passed an Act of Secession from the United States. Ten medical journals have been, during the last three years, discontinued in States still adhering to the Union."

One cause for the discontinuance of medical publications during the war was the scarcity and high price of paper. Few authors, except those connected with medical schools, could find a publisher. Books used by medical colleges for teaching students were largely those prepared by the professors themselves, and this was a constant discouragement to original works by those not connected with medical schools. To overcome this problem, the Committee suggested that an association like the Sydenham Society of Great Britain should be formed

. . . with as large a body of subscribing members as can be obtained; with a publishing committee, to whom all new books should be submitted; with power to select for publication such as in their judgment merit publication; the profit of such work, or an average percentage, to go to the respective authors. This would give a stimulus to authors such as has never been known in this country, and complaints would no longer be heard that no one but teachers and professors in

large institutions can find publishers. This Society, under the direction of a board with five or more members chosen by the A. M. A., would exert great influence in promoting the progress of American medical literature. No better planning could be devised to supersede that depraved appetite for mere medical gossip and the frothy inanities of extemporaneous journalism, which has been so rife in this country for many years past, and with which practitioners are too often satisfied. To develop talent, the state and county medical societies and the medical faculties should offer prizes for the best essays on special subjects. Medical libraries should be established in the large cities, and medical book clubs in all our large towns. The one obvious way of promoting better medical literature is to raise the standard of medical education. The time had come when the profession should insist on an examination in the fundamental branches of learning as preparatory to admission to our medical colleges.

At that time, not one "literary graduate" in 10 ever began the study of medicine.

The president announced at New York in 1864 that the report of the Committee on Medical Literature was in an advanced stage of preparation at the time of the death of the chairman, L. M. Lawson of Ohio. No report was received.

A communication from Chairman Charles A. Lee was read at Boston in 1865, explaining the failure of his Committee to present a report. This Committee was permitted to present a report later.

Dr. Davis' Presidential Address

N. S. Davis, President of the Association at the Boston meeting, elaborated on his plan to change the method of conducting annual meetings. The embarrassment attendant on past meetings, he said, arose mostly from difficulty in accommodating the important and varied interests so as to satisfy all concerned. For example, whenever medical education became the theme of discussion, those more interested in the reading of scientific papers would restrict debate, refer the subject to committees, or in some way avoid what they regarded a waste of time.

On the other hand, if the reading of a scientific paper was commenced, the author would seldom complete more than a few pages before some advocate of educational reform would move to dispense with further reading and have the scientific paper referred to the Committee on Publications. Under these circumstances, "our records soon become cumbered with a multitude of reports and resolutions concerning medical education, and the Transactions plethoric with reports and papers that were read to the Association by their titles only; while the social entertainments reached a magnificence and costliness seldom equalled in any other relation of society."

Extravagant Entertainments

Changes in the Constitution of the Association had been proposed to relieve the embarrassment resulting from the way the meetings were conducted. The change designed to check the extravagance in social entertainments resulted, however, "only in exchanging one magnificent public banquet occupying one evening for three or four private ones every evening during the annual sessions. . . . Some had entered on the work of the Association in the hope that it would be an agent for speedily securing adoption of a uniform and elevated standard of medical education by all medical schools of our country," but, having seen years pass without its adoption, they naturally concluded that the Association was a failure. Dr. Davis continues:

> Others, who entered with equal zeal upon the work of organization, with the hope that it would be the means of establishing in the profession of our country, a spirit of original scientific investigation, a more complete elucidation of the causes and laws governing the prevalence of zymotic and epidemic diseases, and a higher standard of medical literature, have found in our short annual sessions and the little attention actually given to scientific and original papers, comparatively little to sustain their zeal, or to deter them from writing over our portals the word failure. Therefore, it is not strange that we should meet here and there an unfriendly criticism, or the uncomplimentary remark that our annual meetings partake more of the character of "gormandizing and sight-seeing," than of grave scientific and professional inquiry. . . .
>
> At the commencement of our associate existence, the number of original American medical works was comparatively small; and the universal complaint was not only that American talent was spent only in the editing of foreign books, but that our own writers even of the highest reputation found it extremely difficult to find publishing houses willing to issue their works from the press. . . . We now rarely see the name of an American writer appended, merely as the editor of a foreign work, while the medical press of our country literally teams with original medical works of high merit in every department of medical science.

Dr. Davis made no recommendation or reference in his address to establishing a national medical journal. Nevertheless, 18 years later, he became the first editor of THE JOURNAL.

Sixteen New Periodicals

Dr. Lee, whose Committee failed to report at Boston, presented a report the following year (1866) at Baltimore. Most of the medical periodicals that suspended publication during the Civil War had been or were about to be revived, and 16 new journals had been added recently to those already in circulation. Possibly because of the reprimand by Dr. Gross in 1856, hospital and clinical reports now were becoming more plentiful; "but it is a mistake to commit this department, as is often done, into the hands of medical students. It requires a medical man of age and experience to know what is worth reporting; and, for want of this knowledge, some of our journals are filled with details of unimportant cases not worth the paper on which they are printed. It is well to offer prizes for the best medical reports of clinical cases; but it does not follow that they are worth publication. We have read reports of a single case spread over half a dozen pages, when all that is worth reading can be condensed on half a page, or less."

For the report at Cincinnati in 1867, Chairman Alfred C. Post of New York thought it was unnecessary for the Committee to do much more than list the medical books published in the United States since Jan. 1, 1866. In referring briefly to the periodical literature, he mentioned "the Transactions of our medical societies which contain many papers of great and permanent nature," commending especially Dr. J. G. Fisher's paper on "Diploteratology" in the Transactions of the Medical Society of the State of New York. Of great interest were the reports of boards of health of many of our cities, especially metropolitan New York, which in fighting a cholera epidemic had difficulty in convincing the public of the necessity of better sanitation. The Committee looked forward to the benefits to the profession and to humanity from the medical history of the Civil War which the surgeon general's office was then preparing. Dr. Post's report was by far the shortest report presented by the Committee in the last 20 years, and that probably pleased the delegates.

Publishers Ignore Committee's Request

The Committee of which George Mendenhall of Ohio was chairman wrote to all medical publishers in the United States requesting a copy of "books, pamphlets, essays, monographs, periodicals, reports, lectures, proceedings of societies, etc., that may be issued by you" on which to base their report for the Washington meeting in 1868. Not one publishing house responded. "It is difficult to conceive," the Committee said, "that publishers whose interest consists in disseminating widely a knowledge of medical publications, could so far exhibit the illiberality indicated. For several years past they could have been liberally patronized. Many of them have amassed fortunes from the profession and yet when called upon by the committee of this Association, representing the medical men in the United States, we have this beggarly response (one small volume was sent in by its author) to a request for assistance in making up the annual report on the medical literature in 1867. The committee has, therefore, been under the necessity of procuring the requisite information from such sources as came within its power. Under these circumstances, it could hardly be expected that a full report can be made."

Medical journals were said to afford the greatest stimuli for the improvement of medical literature; some urged that we have too many journals and that if the best talent were concentrated on a few it would be better. "This we believe would be an error. Few physicians write from motives of pecuniary gain, nearly all do so for professional advancement. . . . It is said that much thus written is of no value, and had better never been printed. This may be true, but articles that are valueless are not likely to do any harm, while if a few grains of gold can be gathered from material that otherwise would have lain dormant, we claim an advance has been made. . . . Free thought and free writing, with the power of readers to reject the bad and treasure the good, even should the valueless exceed the valuable, is our true policy. This view, however, is not intended as an apology for the publication of articles that are not the result of honest and truthful investigations."

Editors Organize

The New Orleans meeting in 1869 adjourned without a report from the Committee on Medical Literature. During this meeting, an announcement was made of the organization of the Association of American Medical Editors, for the promotion of "the value and efficiency of our periodic medical literature." The announcement was signed "N. S. Davis, editor, President of the Association of American Medical Editors."

Cost of Illustrations and Corrections

In 1870, the Committee on Publication reported that 550 copies of the Transactions of the previous year had been published and that a number of volumes remained on hand. The Committee complained of the cost of publishing the illustrations in papers and of the many editorial changes which authors made on their galley proofs, whereupon the Association placed the responsibility for the revision of proofs on the Committee itself, rather than on the authors. At this meeting in the city of Washington, H. R. Storer of Massachusetts moved that all future editions of the Transactions be stereotyped. The motion was amended by Dr. Gross of Pennsylvania to provide for publishing the Transactions periodically "in a journal to be called the American Medical Association Journal, issued monthly under the supervision of a competent editor." The amendment, although adopted, was reconsidered and referred to a special committee, which never did make a report.

The End of the Committee on Medical Literature

It must have been obvious by this time even to the more conservative delegates that the 25-year-old standing Committee had lost its grip on the medical literature. That much and more was admitted at Philadelphia in 1872 when Chairman Theophilus Parvin of Indiana said that the Committee on Medical Literature was no longer a necessity, and not even a possibility, as far as its duties were concerned. He would abolish also "the ponderous annual volume (the Transactions) which probably had 300 faithful readers. Ought not this Association speak to a far larger audience? Ought it not wield a far greater power than it can when there are so few to know its utterances?" He urged the establishment of a weekly, semiweekly, or "even a monthly journal."

At the next meeting in St. Louis, Chairman Lunsford P. Yandell of Kentucky also pointed out that the duties of the Committee on Medical Literature had become impossible due to the growth of medical literature. "The rivulet which constituted our literature at the beginning of the century has 'swollen into a torrent—augmented into a river—expanded into a sea.' A committee might, indeed, compress it in a report if adequate leisure could be commanded for its preparation; but then the Association would have neither the time nor the patience to listen to such a paper, nor room for it in a single volume of its Transactions." Further encouragement of the native medical literature, "however necessary it may have been when this committee was created, would be now certainly a work of supererogation." And that was the last of the Committee on Medical Literature.

Journal Prospects Improve

In 1879, the old line of hesitation wavered when Dr. Chaille made nine proposals for a more efficient organization of the American Medical Association and for greater uniformity of organization among the state medical societies. One of these proposals was to substitute a periodical for the annual volume of Transactions. The special committee, Foster Pratt, N. S. Davis, S. D. Gross, and A. N. Bell, appointed to study them reported unfavorably or discouragingly on eight of these proposals. The safest and surest way to attain most of the desirable ends proposed, they said, is to patiently await the operations of the law of growth. "Growth is slow, and large bodies move slowly; it is a well known fact, in these days, that the march of a great army is measured not by the strength of the strong, but by the feebleness of the feeble. Let us be patient." However, the proposal for a periodical was said to be "a consummation devoutly to be wished." Their report was accepted.

Considering the Cost.—The 31st Annual Meeting was held at the Y. M. C. A. in New York City in 1880. In his presidential address, Lewis A. Sayre forcibly recommended that the Association establish a journal. J. R. Bronson of Massachusetts then

proposed that a committee be appointed "to report tomorrow morning" on the practicability of Dr. Sayre's recommendation. The committee (Dr. Bronson, chairman; W. W. Dawson of Ohio; W. H. Pancost of Pa.; N. C. Husted of New York; and J. S. Green of New Jersey) did not report the next morning, nor at the next annual meeting, nor at any time, as far as could be found in the Transactions. However, as was the custom (and it still is), a committee was appointed to consider the president's recommendations. This committee (J. H. Packard; S. D. Gross; J. S. Weatherly; E. S. Dunster; and Walter R. Gillette) reported a year later after they had considered the cost of establishing a journal. They favored the proposal but hesitated to recommend going ahead because of the want of an assured income. A second special committee was then appointed "to digest and report, in detail, as early as possible, a plan for the publication of a weekly journal by the Association, the nomination of an editor, his salary, and the time and place of publication of such journal." Interestingly, on motion of N. S. Davis, the resolution was amended to leave out the nomination of an editor (vol. 32, p. 33).

Dr. Warren's Opinion.—Dr. Joseph H. Warren of Massachusetts, who had been a delegate to meetings in foreign countries and had just returned from Europe, addressed the Richmond meeting in 1881. One of his most pleasant duties was to attend the annual meeting of the British Medical Association. He said, in part:

> [The *British Medical Journal*] has succeeded in rallying the profession up to a sense of their true responsibility and the proper performance of their duties as members of a National Association. [Its editor, Mr. Ernest Hart, has led] the British Medical Association into the highly successful and honored position it occupies before the profession throughout the world today. . . . I would, Mr. President and Fellows, that the American Medical Association had, in place of its ponderous annual publication, a weekly journal published under its own immediate auspices; and I would that at its head we had an editor with a vigor to equal that of Mr. Hart, that he might, with his editorial staff, stir all the dry and mouldering members into a new life, and that he might infuse into them an activity and interest equal to or even greater than that which the British Medical Association shows today. I think I am not mistaken, nor over-confident, when I say that such an editor and such a journal would be the means of developing from an atrophied membership of today some real honest work, and of displaying the mighty power and the wonderful, but latent scientific matter that now lie dormant in the hands of our fellow-members.

Setting the Stage

The second special Committee, John L. Packard, N. S. Davis, L. A. Sayre, J. S. Billings, R. B. Cole, with the Secretary of the Association, W. B. Atkinson, and the Treasurer, R. J. Dunglison, after considering the many problems involved, set the stage for the event at St. Paul in 1882. They recommended that membership in the A. M. A. be thrown open to all members of state and county societies, on application, by the payment of an annual fee of $5, which would pay also for a subscription to the proposed periodical. It would be preposterous, they said, for an association which had never had an annual income above $6,000, and sometimes as low as $2,500, to assume an expense which they estimated at $13,500 a year, unless it could be made more stable and comprehensive in character. On going into such a large enterprise, the Association should have a Board of Trustees and a charter. They proposed that nine trustees from different parts of the country be elected and that they circularize all regular physicians to ask their pledge of support. If 2,000 pledges could be secured within three months, it would be considered safe to go ahead and appoint an editor at a salary of $6,000 a year, out of which he would pay his assistants. The report was unanimously accepted.

The First Board of Trustees.—The president appointed a committee of seven to nominate a Board of Trustees, and the following nominations were approved by the delegates: Drs. N. S. Davis of Illinois; E. M. Mobre of New York; J. M. Toner of the District of Columbia; H. F. Campbell of Georgia; J. H. Packard of Pennsylvania; L. Connor of Michigan; P. O. Hooper of Arkansas; A. Garcelon of Maine; and L. S. McMurtry of Kentucky. The trustees met immediately after the St. Paul meeting and elected Dr. Davis President of the Board. He had served as chairman of committees and councils and had carried on scientific investigations;

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he had worked for improvement in methods of procedure and was the only member who had ever been elected twice to be President of the Association (1864-1865).

The Davis Medal

That his leadership was appreciated was strikingly shown at Detroit in 1874 in a resolution, introduced by H. S. Askew of Detroit, to provide a medal with a likeness of Dr. Davis on one side and the name and date of the organization on the other, and that "hereafter one be furnished to each delegate." Five years later at the Atlanta meeting, Stanford E. Chaille of New Orleans, in an address, said, "I well know that this Association has, in spite of many obstacles, done great good; and that this nation has no son who deserves more homage than he who founded it, who still fosters it with a wise father's love, and who enhances, in my esteem, the honor in which all hold his name, when—mindful of the heroic lesson, that man can receive no true honor from, but can confer it on, official station—he signs that name, N. S. Davis, Secretary of the Illinois State Medical Society,—'for, of such is the kingdom of' the American Medical profession."

The Birth of the Journal

The trustees mailed 40,000 letters with blank pledges of support to all physicians whose addresses they could find. There were many more physicians in the country but there was no way then to find their addresses. Of 2,150 returns received, 2,100 pledged support; 12 were opposed; and 38 were equivocal. The result was considered sufficient to proceed.

The trustees met again in the Grand Pacific Hotel in Chicago on Jan. 17, 1883, and formulated a general plan to guide the editor, parts of which are still followed to this day. They reviewed estimates from nine printing houses in different cities and recommended Tucker, Newell and Company in Chicago. THE JOURNAL was to have 32 double-column pages exclusive of advertisements, and 3,500 copies a week were to be printed. Such was the beginning of a journal which today contains several times as many pages and which, several times, has had as many as 200,000 copies in one issue.

At Cleveland in 1883, after the delegates had approved the trustees' recommendations, the Secretary of the Board, L. S. McMurtry of Kentucky, announced that N. S. Davis had been selected to be the editor-in-chief. Dr. Davis addressed the delegates, asking them not to expect too much and to bear with any shortcomings which might appear. The vote of thanks given for his kindness, self-denial, and willingness to assume additional arduous duties was unanimous. On July 14, 1883, the first issue of THE JOURNAL was brought forth.

The long labor was over, and the voice of the Association, which had been heard feebly once a year for so long, has been heard every week ever since, throughout the land.

Dr. Hammond
Associate Editor of THE JOURNAL

The fashionable shape—actress Anna Held, a kind of symbol of the true gaiety of the Gay Nineties

A freak of the Johnstown flood—a slightly damaged house

Dixon, a celebrated tightrope walker, crossing Niagara on a ¾-in. wire

This Was News

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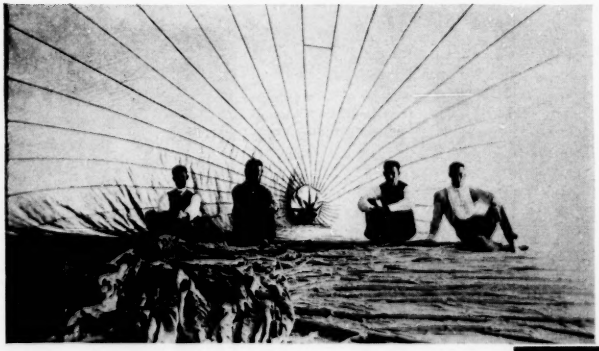


Preparing for a balloon flight over Connecticut

John L. Sullivan knocks out Jake Kilrain—the last great bareknuckle championship bout in the United States was fought at Richburg, Miss., under a blazing sun, and lasted for "seventy-five red rounds."

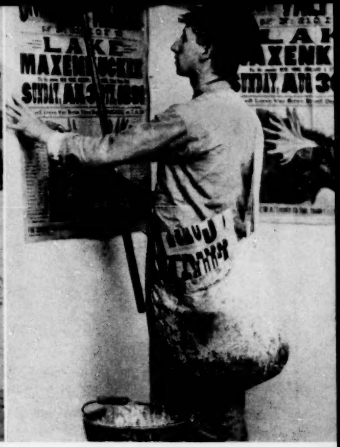
PICTURE the days three-quarters of a century ago: Saturday night scrubbings . . . The circus and the county fair . . . Cutting ice from the pond after a long cold snap . . . A 75-round championship boxing match—bareknuckle . . .

When THE JOURNAL was born, roads were being built by the muscles of men and horses; former President Ulysses S. Grant was hurrying to pose for a family portrait before dying of cancer; grownups were riding high-wheelers around the church square; the "fashionable shape" of actress Anna Held was just coming into vogue; and Boston was winning the National League baseball pennant.

This was America's image before the turn of the century. These scenes of those early years are reproduced from the collections of the Library of Congress.

A feather-duster man in Chicago

Organ-grinder and his wife in New York—1897

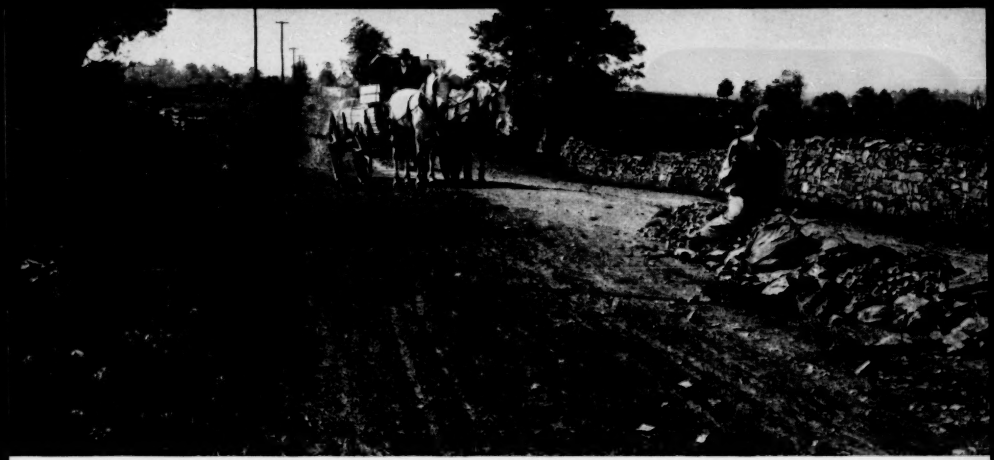


A bill-poster

This Was the City

Scissors-grinder of New Orleans carries his machine on his shoulders and a toolbox from his neck

West Washington Market in New York —produce wagons, stalls, and buyers



Road-building—a human stonebreaker and a typical two-horse wagon

This Was the Country

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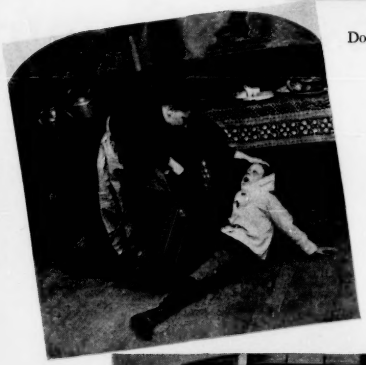
Drawing water—the old-fashioned enclosed well has a long "sweep"

Hog-killing—the animals are suspended from a pole, supported by crotched sticks, before a log cabin with a shingled roof

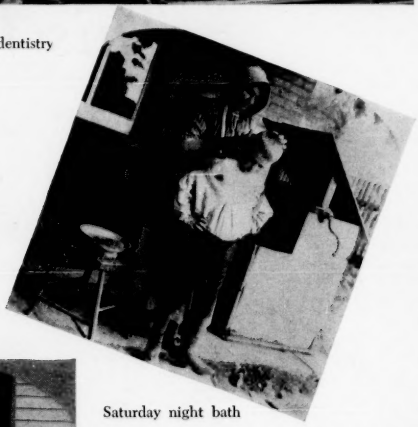
The ox-pulled wagon—a typical scene from rural Negro life. The log cabin with slab roof and stone chimney is a survival from a still earlier day

This Was Home

General U. S. Grant and family

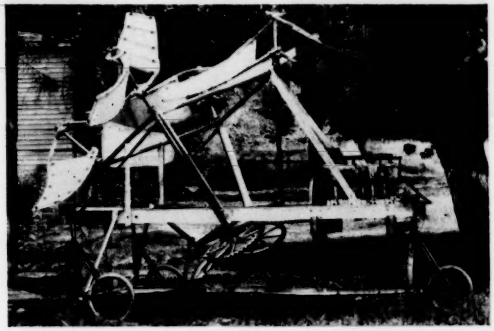


Domestic dentistry



Saturday night bath

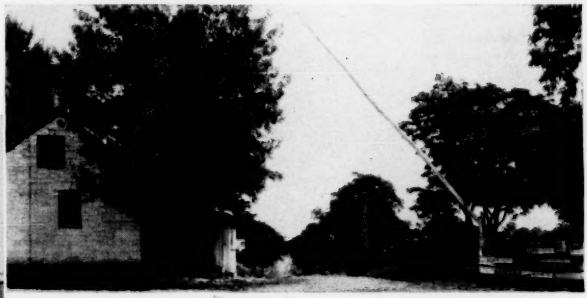
The home circle—1889



An early freak aircraft

This Was Travel

Old turnpike toll gate—with keeper's house, toll booth, and barrier



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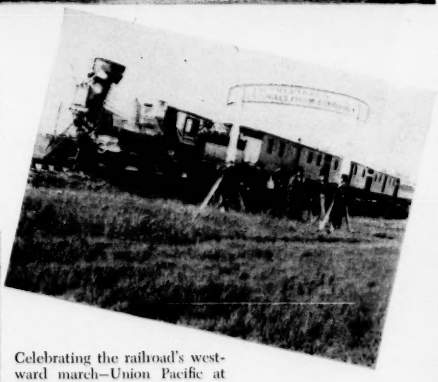
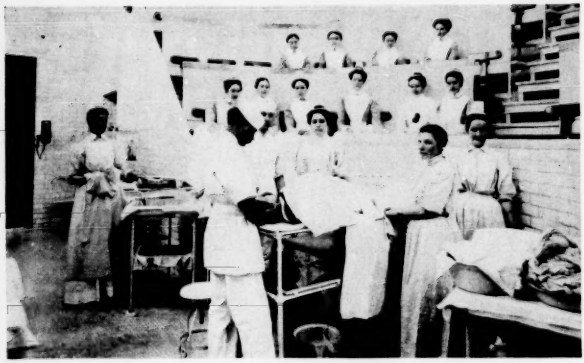
The high-wheelers of the 1880's—on the plaza near Trinity Church in Boston



Celebrating the railroad's westward march—Union Pacific at the 100th meridian

Interior of largest steamboat ever built in the West—the "James Howard," 330 ft. long, with 54-ft. beams, a 10-ft. hold, and 6 boilers

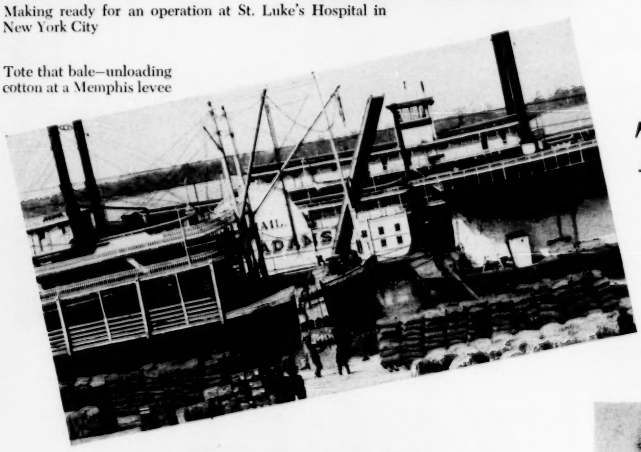
This Was



Making ready for an operation at St. Luke's Hospital in New York City

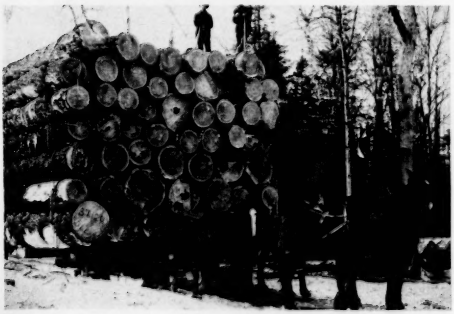
Secret photograph of the New York Stock Exchange—this one was snapped with a camera concealed in the photographer's sleeve

Tote that bale—unloading cotton at a Memphis levee



This Was School

Lumbering—huge sleds get out the largest load [of logs] ever hauled. It consisted of 56 long logs, 37,000 feet of lumber 26 feet high



Work

A nearly forgotten occupation—cutting ice. Men waited for a long "cold snap" to cut pond ice into blocks for storage in huge wooden icehouses

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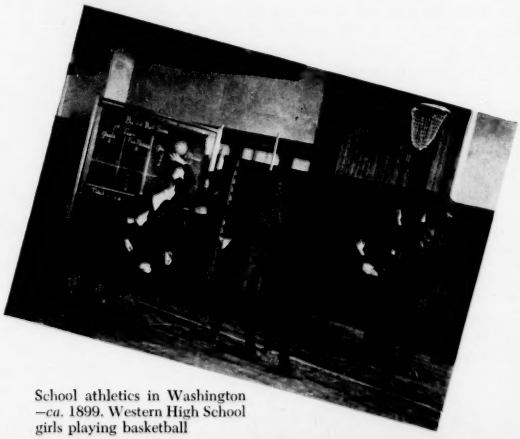
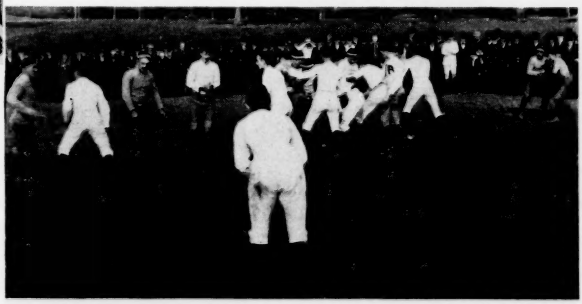
and Play



School athletics in Washington —*ca.* 1899. Western High School girls playing basketball

East Side Public School, photographed by Jacob August Riis journalist, author, and social reformer



Football teams in action—Cornell vs. Rochester

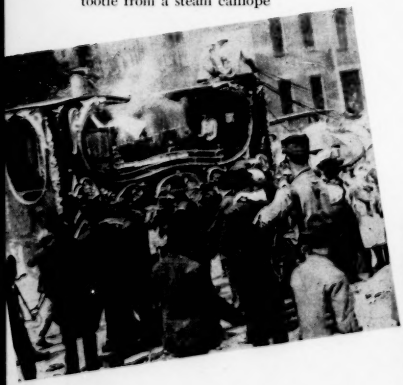
Shooting craps in the hall of the newsboys' lodging house

Tintype booth at the county fair

This Was Diversion

An old sport—curling
on the pond, near Boston

The circus is coming to town—
tootle from a steam calliope



Opening of the league baseball
season, New Yorks *vs.* Bostons

FOREIGN LETTERS

AUSTRIA

Influenza Epidemic.—At the meeting of the Society of Physicians in Vienna on May 16 Drs. A. Takriti and W. Zischka reported that in 6 of 14 patients who died of influenza in the epidemic of 1957 and on whom autopsy was performed the findings revealed an uncomplicated influenza, while the rest were secondarily infected with staphylococci. Type A Asian influenza virus was identified in 7 of the 14 patients by chick embryo culture. In three additional patients in whom culture was performed but in whom the diagnosis of influenza could not be made unequivocally, the cultures at autopsy were negative. From the small number of patients it appears that the positive culture of the virus, particularly in patients with a short duration of the disease, may be expected up to the fifth day of the disease.

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Glaucoma.—At the same meeting Dr. U. Nemetz said that effective treatment of glaucoma may be medical or surgical. In an attempt to decrease the intraocular tension medically, in the course of which the patient is expected to follow precisely the doctor's instruction, it is important to consider that in time the effectiveness of this medication can be impaired as a result of habituation and that intoxication may occur. Arguments against surgical treatment of glaucoma are an insufficient reduction of the intraocular tension, with resulting postoperative blindness in malignant cases, reduced visual acuity, diminution of the field of vision, and a rapid increase in the opacity of the lens. At the eye clinic of the University of Vienna 3,600 patients with glaucoma were operated on and followed up regularly for 3 to 10 years after the operation. Insufficient drop of pressure necessitated one or more subsequent operations in 190 patients (6%). In all other patients (94%), even when operated on at an advanced stage of glaucoma, the result was satisfactory. Blindness occurred in 80 patients (2%). In the same period (1945-1956) loss of vision from glaucoma occurred in another 320 eyes (90 of them after medical therapy); 230 patients consulted a physician only after they had become blind in one eye. It is therefore recommended that patients who are over 40 visit an ophthalmologist regularly for a determination of their intraocular pressure.

The items in these letters are contributed by regular correspondents in the various foreign countries.

BELGIUM

Sociological Study of Births.—At the meeting of the Royal Belgian Society of Gynecology and Obstetrics, Graffar and Asiel reported that they had studied a relatively small but representative group of children. They found that the number of children per family decreased progressively with a rise in the social scale up to class 2, but in the first (wealthiest) class families the average number of children was almost as great as in the poorest families. They also found that about half the women worked outside the home during pregnancy. The proportion was less in the wealthiest class and about 50% in the other four classes. Most of the women who were employed worked full time, and most of them quit work at least one month before term. The incidence of premature births was low in the observed population and was almost the same in the three middle classes. This fact was attributed to the generally good habits of hygiene, the sound nutrition, and the high level of prenatal care. On the other hand, in all the social classes, premature births were much more frequent in women who had worked outside the home than in those who did not. The speakers believe that they have succeeded in separating the effect of outside work during pregnancy from the effect of other social conditions which are generally considered as contributing to premature birth. The speakers also found that work outside the home during pregnancy, independently of other social conditions, increased the frequency of necessary surgical interventions during delivery.

Dilatation of the Esophagus.—At the meeting of the Belgian Society of Gastroenterology in December, Vangoitsenhoven and Dodero of Louvain stated that in the treatment of achalasia the dilatation is commonly performed by using a sound weighted with mercury, which often produces only partial subjective and objective improvement. The use of force, whether it is pneumatic, hydraulic, or instrumental, aims at rupture of the esophageal tunica muscularis. The speakers had their patients swallow

a thread, weighted with lead or with a mercury balloon, to serve, when anchored in the intestines, as a guide for a small hollow balloon. This balloon had a nylon cover which prevented excessive dilatation. When the balloon was astride the cardia, air was pumped into it until the desired pressure (200 to 300 mm. Hg) was attained. All of the patients were in great pain during dilatation; when dilatation was effective streaks of blood covered the balloon when it was withdrawn. Complications occurred in 4 to 12 patients. Two had pain which continued after dilatation, one had a pleural reaction and moderately elevated temperature for three days, and one had a mediastinal abscess which responded to medical treatment. The results, however, were invariably good. No reflux was noted and all patients gained weight (14 to 15 kg.); a roentgenographic check showed an easy passage through the cardia; the caliber of the esophagus became normal in seven patients (in two, it was unchanged); and motility was sometimes restored. The long-term results were generally good.

BRAZIL

Vital Statistics for Rio de Janeiro.—Rio de Janeiro, with more than 2,900,000 inhabitants, is growing rapidly. The recent publication of the data for the city for 1957 in the bulletin of the Federal Bureau of Vital Statistics compares the vital statistics for the five-year period, 1948-1952, with those of the period, 1953-1957. The annual death rate from all causes had decreased from just below 20 per 1,000 in the early 1940's to the mean annual death rate of 12.9 for the period 1948-1952; for the period 1953-1957 it was 12.1. On the other hand, the birth rate increased from the mean annual value of 22.3 per 1,000 in the first five-year period to 24.1 in the second. The mean annual rate for stillbirths was 70.1 per 1,000 live births and stillbirths in the first period and came down to 56.8 in 1957. The annual death rate per 1,000 live births in the age group 0 to 1 year was 109 in the period 1948-1952 and 111 in the period 1953-1957, but the maternal death rate per 1,000 live births fell from an average of 4.5 in the first period to 3.9 in the second. This reduction was mainly due to a decline in puerperal infection as a result of the increased use of antibiotics. The number of cases of most communicable diseases showed a similar decline. The average annual number of deaths per 100,000 from pulmonary tuberculosis dropped from 188 in the first period to 88.4 in the second. The rate for typhoid fell from an annual average of 4.9 in the first period to 3.0 in the second. The rate for dysentery (mainly bacillary) increased from an annual average of 3.8 in the first period to 5.1 in the second. Whooping cough, measles, and diphtheria showed a significant decline.

CANADA

Schizophrenia in Japanese Canadians.—Terashima (*Canad. Psychiat. A. J.* 3:53, 1958) made a careful study of three Japanese-Canadian schizophrenic patients, with a view to evaluating the relationship of their sociocultural background to the symptoms and course of the illness. External stress was an important causative factor. The Japanese immigrant to Canada has cultural values so deeply ingrained that they are difficult to modify when he is transplanted to an occidental society. Though the stresses of transplantation must aggravate preexisting personality difficulties and may lead to psychological disorder, these stresses are much greater in the second generation. The children (nisei) are under even greater stress, for they have on the one hand a desire to be accepted and assimilated by the dominant society, which is in general hostile to them, and on the other hand they are rejected by the older Japanese immigrants (issei) as not being good Japanese. It is difficult for the nisei to establish positive identification with their parents, and this gives rise to feelings of hostility. Studies of mother-child relationships in schizophrenia emphasize the feeling of rejection and aggressive attitudes on the part of the mother. As children nisei are so dependent on their mothers that they are deeply affected by the mother's emotional attitude. This disturbed parent-child relationship was probably a factor in the development of schizophrenia in the author's three patients.

Mental Hospitals.—Everyone must by now be aware of the unpopularity of the large mental hospitals, constructed in a bygone age for custodial care of mental patients in remote parts of the countryside. In the *Canadian Journal of Public Health* (49:186, 1958) Lawson described the plan developed for dealing with mental illness in Saskatchewan. The province will be divided into eight mental hospital regions approximating the present and projected health regions, each of a size to cater for about 73,000 persons and an area about 160 miles in diameter. In each region a hospital will be built, and the bed capacity of the present two huge mental hospitals in Saskatchewan will be gradually reduced. Each of these eight hospitals will serve as the focus for psychiatric care in the region and will include an outpatient mental health clinic. In addition to administrative and other facilities, it will have an admission building capable of housing 10 patients, an infirmary capable of housing 10 acutely and 24 chronically physically ill men, with a similar building for women, and as many continued treatment buildings, each with 30 beds, as appear necessary. Each hospital will be built in the vicinity of a general hospital, so that the operating room and x-ray unit need not be duplicated. The buildings will be Y-shaped and

single story, containing 10 to 12 patients in each of the three wings, accommodated in single, two-bed, or four-bed rooms. Flexibility will be the keynote in building, so that additions may be readily made or the buildings may be adapted for senile or chronically physically ill patients, or even as an old folks' homes if the volume of mental illness drops greatly. The ratio of nursing staff to patients will be 1:2.34.

Christian Scientists and Health Insurance.—A report from Manitoba, where a compulsory health insurance scheme is imminent, stated that members of the Christian Science Church have applied for exemption from payment of premiums under the government's hospital insurance plan. They ask for exemption in consideration of the rights of the individual to rely on prayer and spiritual means for the prevention and healing of human ailments. They have no wish to dissuade the government from considering a scheme of health insurance so long as no person of their faith is forced to participate. Nevertheless, they recognize that there may be times when Christian Scientists are under direct hospital care for childbirth or emergency treatment as a result of catastrophe. They would expect to pay for these services. Protest of this group appears however to have fallen on deaf ears, for the Minister of Health said that such a specialized exemption would mean an overwhelming amount of administrative work for the government.

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Insurance Abuses.—It has been suggested by more than one politician that the success or failure of forthcoming health insurance schemes will depend on the physician. In other words, there seems to be a movement to make physicians the scapegoats and to hold them responsible for any abuses. At a recent meeting of the Ontario Medical Association, the council of the association protested against this thinking and complained that government administrators had not yet made the public aware of their responsibilities in respect to unnecessary hospital admissions. They also passed a resolution stating that the patient must assume his share of the burden and curb, in his own interest, trivial, selfish, or unnecessary demands for admission to or unduly prolonged stays in hospital. Until the patient has been made thoroughly aware of his duty, the physicians cannot be expected to accept responsibility for shortcomings which may develop from this. One council member said that in the United Kingdom, because the public had failed to realize the dangers of overutilization, there were now 400,000 people waiting for hospital beds. In view of the great pressure on hospital beds in Ontario now and of the fact that the new insurance covers only hospital and not domiciliary treatment, a grave situation as regards availability of beds could soon develop.

FRANCE

Antenatal and Perinatal Deaths.—Jean Chosson and co-workers (*Presse méd.* **66**:893, 1958) studied a series of 26 infants that died either in utero, in the course of labor, or in first few hours of life. The greater the prematurity, the greater the incidence of lesions in the central nervous system. The lesions encountered were chiefly hemorrhagic. They also observed purely congestive lesions, edematous infiltrations due to anoxia, and, occasionally, perivascular cellular infiltration with no specific inflammatory changes. In all cases there were no changes in the meningeal and parenchymatous vessels. The authors could usually find an explanation for the death but could not determine the underlying cause. Most of the lesions observed were due to pathological conditions of the gestation, placental alterations, or unfavorable circumstances for the delivery.

Blood Histamine Level.—C. D. Veziris (*Semaine hôp. Paris* **34**:1309, 1958) studied the blood level of histamine in 54 women who were either in menopause or had been castrated, without any replacement therapy. The level was elevated in 36 of them and normal in the rest. An elevated histamine level was usually associated with moderate or severe menopausal disturbances, and a normal histamine level was found in those with mild or absent menopausal disturbances. Reduction in the histamine level was generally obtained by giving estrogens in amounts sufficient to control the subjective disorders of menopause. The author concluded that menopausal flushing was due to a release of histamine and not of epinephrine as was first assumed.

Hypochromic Anemia.—J. Mallarmé and co-workers (*Presse méd.* **66**:986, 1958) in a review of 150 cases of hypochromic anemia found that although frequently overlooked this condition is fairly common in adults. Sideropenic hypochromia is the commonest of all and is more often encountered in men than in women. In 80% the patient is over 40. Sideropenic hypochromia is secondary to hemorrhage in 83%. Secondary nonhemorrhagic sideropenic anemias are rarely seen. They are due to nutritional or endocrine disturbances, or to pregnancy. Constitutional primary sideropenic anemia is rarely encountered in France. Adolescence chlorosis is also rare. Beside sideropenic hypochromias, an important place is held by metabolic hypochromias without sideropenia, as mainly represented by major or minor thalassemia with anemia or polyglobulism.

Vaginitis and Neonatal Infections.—J. Bret and coworkers (*Presse méd.* **66**:931, 1958) stated that most mycoses in the newborn are due to contamina-

tion by a maternal vaginal mycosis. About 20% of pregnant women, at the time of delivery, harbor Candida albicans in the vagina. No infant born to a mother who did not have a vaginal mycosis was found to have C. albicans in the buccal cavity or nostrils immediately after birth. Newborn infants who at birth harbor C. albicans in the buccal cavity or nostrils were born of mothers who were carriers of the same organisms. About 83% of women affected with vaginal moniliasis transmit this infection to the newborn in the course of labor. Of the infants who harbored C. albicans on leaving the maternity department 2% became infected after birth. The spontaneous disappearance of these organisms in the newborn remains unexplained. The transient presence of C. albicans in the urine of the newborn, without any associated sign, is not an evidence of disease. The prevention of neonatal infections requires thorough bacteriological investigation and treatment of vaginitis in the course of pregnancy. Determination of the agent responsible for an infection of the newborn should always include a study of the vaginal flora in the mother, this being particularly necessary when the organism is difficult to detect in the newborn.

Neuropsychiatric Accidents After Cycloserine Therapy.—A Lévi-Valensi and co-workers (*Presse méd.* **66**:849, 1958) stated that neuropsychiatric accidents have been reported after the introduction of every new antituberculous agent, particularly streptomycin and isoniazid. They found that cycloserine may also be responsible for the development of neuropsychiatric disorders. These are generally moderate (cephalalgia, vertigo, and disturbances in sleep) but may include more serious conditions such as convulsive seizures, maniacal agitation, and delirium. The electroencephalogram does not afford much information in such patients, but many of them give a history of psychopathy or alcoholism. The cause of these disorders is not known, but it is likely to be toxic or allergic. The treatment is symptomatic and preventive. Administration of barbiturates, neuroplegics, or tranquilizing agents concurrently with cycloserine seems helpful.

Pneumoconiosis.—Roger Even and Christian Sors (*Presse méd.* **66**:906, 1958) studied 12 iron miners with pneumoconiosis. They concluded that the disease appears from 15 to 20 years after the occupational risk. It usually evolves—in contrast with the common optimism—towards a fatal end due to right ventricular incompetence. Histologically sclerosis, emphysema, and siderosis are always seen, whereas silicosis is inconstant (6 of the 12) and discrete. The pneumoconiosis of iron miners is either a siderosis or a silicosiderosis, clinically and anatomically inseparable from associated emphysema and pulmonary sclerosis, and it should be included in the table of occupational diseases.

Variations in Urinary Steroids.—M. Albeaux-Fernet and co-workers (*Presse méd.* **66**:809, 1958) studied the behavior of the urinary steroids in the course of senescene in 24 men and 32 women. They observed a progressive and constant decrease in 17-ketosteroids and corticoids. As a rule the steroid level was higher in ambulant than in recumbent subjects. The response to ACTH and the secretion of aldosterone were normal in old but healthy subjects.

INDIA

Electrocardiographic Changes in Influenza.—Datey and Mody (*J. A. Physicians of India* **6**:2 [April] 1958) studied the electrocardiographic changes in patients affected by the epidemic of Asian influenza to evaluate the associated myocardial involvement which may have contributed to the morbidity and mortality during this epidemic. Electrocardiograms were made in 23 patients. The limb leads I, II, III, aVR, aVF and unipolar leads V4R, V1, V2, V3, V4, V5, and V6 were recorded. These were taken during the febrile phase, the temperature being 100 F (37.8 C) or above and were repeated after the patients became afebrile. If abnormalities persisted electrocardiograms were taken at intervals till normal tracings were obtained. Of these patients 13 showed definite electrocardiographic changes; 19 showed a relative bradycardia. Ventricular and supraventricular premature beats were noted in one patient. One showed a right bundle branch block with abnormal T waves, and six showed a depression of the S-T segment mostly in lead II, III, and aVF. Changes in the T wave were the most frequent changes noted; 10 of the 13 abnormal electrocardiograms showed an abnormal T wave. This consisted of flattening or inversion in standard as well as precordial leads. In one patient the changes persisted for about two weeks after he became afebrile. The abnormal electrocardiographic changes were not related to the height of the temperature as some patients with a temperature of 103 or 104 F (39.4 or 40.0 C) showed no abnormal electrocardiographic changes, and others with a temperature of only 100 F (37.8 C) showed definite changes. These changes reverted to normal after recovery except in the aforementioned patient. The authors concluded that in spite of the absence of clinical evidence of myocarditis, electrocardiographic evidence of involvement of the heart was present in 11 patients. They believe that the activities of such patients should be restricted during the period of electrocardiographic abnormality.

Influenza and Eosinophilia.—Malhotra and Sen Gupta (*J. A. Physicians of India* **6**:2 [April] 1958) reported a series of 5,458 patients with pulmonary eosinophilia following an epidemic of influenza. The incidence of postinfluenzal cough was high;

2,146 patients (39.3%) had this sequela. A high eosinophilic count was observed in some of these patients with persistent cough. The authors therefore investigated 40 such patients by getting a leukocyte count. A roentgenogram of the chest was taken in 21. In 32 patients the eosinophilic count was 10 to 65% and the total eosinophils numbered 2,100 to 18,460 per cubic millimeter. The blood counts before the influenzal attack were available in 13 of these 40 patients, and none of them had shown an eosinophilia. The blood smears were negative for microfilariae. The influenzal attack was mild. Cough was a characteristic feature in all of them, being dry and spasmodic early in the course and the sputum becoming mucoid later. In 11 it was accompanied by wheezing.

Examination of the chest showed no abnormal physical signs in 29 patients; 13 had scattered moist rales in one or both lungs; 4 showed basal crepitations. Of the 21 patients x-rayed, 9 showed roentgenographic evidence of bilateral pulmonary infiltration; of these 4 had been wrongly diagnosed as having tuberculosis. Evidence of congestion was seen in seven, while five showed no roentgenographic abnormality. The cough was resistant to all forms of treatment but was helped most by diethylcarbamazine combined with the usual codeine and ephedrine cough syrup. Arsenic was used in some of the patients with resistant cases and found to beneficial. The cough was, however, self-limited. It, the eosinophilia, and roentgenographic shadows cleared up within three to five weeks in most patients. The eosinophilia sometimes took a little longer to disappear than the cough. In some both cough and high eosinphilic count persisted for 14 weeks in spite of treatment. Since the authors found no eosinophilia for the corresponding periods in 1955 and 1956 they concluded that influenza in a certain proportion of patients gave rise to eosinophilia. It is not likely that the eosinophilia was a direct result of the infection, as only 39.3% of the patients developed a postinfluenzal cough. It was probably the result of a hypersensitivity to the influenza virus.

Vitamin B_{12} and Anemias.—J. G. Parekh and coworkers (*J. A. Physicians of India* **6**:2 [April] 1958) studied the serum vitamin B_{12} concentrations in patients with various types of anemia and other diseases, using the microbiological assay technique. The anemias were classified as megaloblastic, dimorphic, and normoblastic hypochromic. The megaloblastic anemias were those in which the bone marrow revealed megaloblasts with fine nuclear chromatin with no tendency to clumping, thus presenting a sieve-like appearance. The dimorphic anemias were those in which the bone marrow contained cells with a chromatin which was a little thicker than that seen in megaloblasts, with slight clumping at intersections, and a basophilic cytoplasm; the red blood cells showed anisocytosis, poikilocytosis, and hypochromia. Serum iron in the patients with dimorphic anemia was low, and this finding helped in differentiating them from those with pure megaloblastic anemia. In patients with normoblastic hypochromic anemia, the bone marrow showed normoblastic hyperplasia, the red blood cells revealed marked hypochromia, and the serum iron was low. Sixty-two patients with diseases other than anemia were included in this study as controls. Seven patients with nutritional megaloblastic anemia had a serum vitamin B_{12} level of less than 50 micromicrograms per milliliter. All but one responded to vitamin B_{12} therapy. Low to normal values were obtained in eight patients with dimorphic anemia. Fifty patients with iron deficiency anemia had normal serum vitamin B_{12} values. Normal values were also obtained in patients with aplastic anemia, one with secondary polycythemia, and one with thrombocytopenic purpura. Patients with myeloid proliferation had high values; three with chronic myeloid leukemia had an average value of 2,141 micromicrograms per milliliter, which is about 10 times the mean normal concentration.

One patient with acute myelocytic leukemia had a value of 968 micromicrograms per milliliter. Normal value was observed in a patient with lymphatic leukemia. Thus the serum vitamin B_{12} determination may help in differentiating various types of leukemia and other myeloproliferative disorders. Four patients with hepatic cirrhosis had high values. One patient with tropical eosinophilia with a total leukocyte count of 48,000 per cubic millimeter had a serum vitamin B_{12} concentration of 1,624 micromicrograms per milliliter. One who had lobar pneumonia with a total leukocyte cell count of 21,000 per cubic millimeter had a vitamin B_{12} value of 1,408 micromicrograms per milliliter. One with gastric carcinoma had a high value — 1,376 micromicrograms per milliliter. Five patients with pulmonary tuberculosis and one with nephritis had normal values. Patients with achlorhydria but without a megaloblastic marrow had normal values. Nonanemic patients had normal values.

Complications of Pneumoperitoneum.—Sarin and Mital (*Current Med. Practice* **2**:3 [March] 1958) described the complications observed after 2,000 pneumoperitoneums performed on 80 patients. Minor complications included retention of urine; pain in the inguinal region; and scrotal pneumatocele in a patient with bilateral pulmonary tuberculosis after he was given 300 cc. of air at the first sitting. Subcutaneous emphysema developed in five patients; in one the needle had not reached the peritoneal cavity, and in the rest, emphysema occurred as the needle was being withdrawn. Constipation occurred in 10% of the patients and diarrhea in 3%. Four patients developed hiccough and

two vomiting. Peritoneal shock, a rare and serious complication, occurred in one child in the series. Right-sided pneumothorax developed in a patient with chronic cor pulmonale who became dyspneic and cyanotic after the introduction of 500 cc. of air at the first sitting. Another patient with bilateral pulmonary tuberculosis, at the fifth sitting, developed left-sided pneumothorax; temporary relief followed aspiration of air from the pleural cavity, then the dyspnea returned. A valvular type of spontaneous pneumothorax was suspected, and continuous drainage was provided. The patient was relieved but died a month later of empyema. Two women, one with pulmonary tuberculosis and one with abdominal tuberculosis, developed peritonitis which responded to conservative treatment. The only fatal complication was in a boy of 16 years with abdominal tuberculosis who developed convulsions and died at the second sitting. Autopsy revealed the presence of air in the jugular veins and all the chambers of the heart. The needle had probably entered a blood vessel.

ITALY

Peripheral Vascular Disease.—Prof. E. Ruggieri and G. Zannini (*Quaderni di Chirurgia*, May, 1958) treated a series of 490 patients with periarteritis obliterans. They analyzed the results in 370 of these, 274 of whom were operated on. The operation of choice was lumbar gangliectomy if the lower limbs were involved. In some patients monolateral adrenalectomy and, in others, a direct operation on the obstruction (such as arteriectomy or grafting) were also performed. If the upper extremities were affected, however, the operation of choice was preganglionic dorsal sympathectomy using Smithwick's technique. In 75 patients amputation was necessary. In 52 of these this was not preceded by any other operation. In general the results were good in about 65% of the patients. Most of these were patients suffering from a degenerative type of arteriopathy. The inflammatory forms (especially thromboangiitis) were much less responsive to treatment. In the medical treatment of this disease heparin, curare, trypsin, and cortisone were used.

Symposium on Sleep.—At a symposium on sleep held by the Lombard Society of Medico-Biological Sciences in Milan in April, it was stated that stereotropic techniques have aided the electrophysiologists in discovering that the substantia reticularis is composed of an ascending and a descending system. The former is the activator, and it reinforces the attention, thus inhibiting sleep. The latter has two components: one which inhibits the attention of the cerebral cortex and facilitates sleep and one which increases the excitation of the motor area of the cerebral cortex. The function of the substantia reticularis was observed not only through behavior of the animals in the laboratory but also by electroencephalography and electrical stimulation of various areas of the brain. The animal wakes up if the ascending system is excited by the electrodes. If the excitation is increased the animal becomes very attentive. Prolonged excitation enrages the animal to the point of aggression. On the other hand the animal falls asleep if one electrically stimulates the inhibitory section of the descending system.

NEW ZEALAND

Tuberculosis Death Rate.—The Health Department report for 1956 shows that the death rate from tuberculosis has been almost halved in five years. While this dramatic reduction in deaths from all forms of tuberculosis is gratifying, morbidity from this disease has not shown such a spectacular drop. This is because accelerated detection campaigns have disclosed unsuspected cases. Mass x-ray units have discovered many of these hidden cases which continue to spread the infection. In 1956 nearly two persons per 1,000 examined by such units had active pulmonary tuberculosis. Many other pulmonary and cardiac abnormalities were also revealed as a result of these surveys, which reached inaccessible communities or working groups that would otherwise have been missed. Pulmonary tuberculosis still accounts for most of the tuberculosis cases in New Zealand. Eight times as many Maoris as Europeans died from tuberculosis in 1956. The rate for Maoris was 56.4 per 100,000 of population. The disease was more prevalent among European men than European women but among Maoris the reverse was true. The report deplored the uncooperative patient. One such patient vanished from a sanatorium. When the contacts of a child whose pneumonia proved to be tuberculous were being rounded up he was found among them. He had in the meantime infected no less than 24 other persons. Shorter recovery periods have allowed Pukeora sanatorium to cease operating as a hospital for tuberculous patients.

New Medical Service Regulation.—The Department of Health in a circular letter to all physicians reported an important amendment to the General Medical Services Regulations of the Health Service. The Minister of Health may now refer to the Disciplinary Committee for investigation any complaint that a physician has been in the habit of providing an unduly large number of daily services with regard to the facilities used by him in his practice, his manner of conducting his practice, or to either of these things. If the committee decides that the complaint is well founded and that an unduly large pro-

portion of the services afforded would not warrant payment from the fund of the maximum amount permitted, the Minister may, on the recommendation of the committee, direct that the amount paid from the fund on any future claims be limited to a specified amount. At the end of three months the physician may apply for this restriction to be revoked. In all cases an informal preliminary inquiry will be made before any complaint of this nature is referred to the Disciplinary Committee. This policy has the support of the British Medical Association. High levels of claiming over limited periods during an epidemic, for example, or the absence from practice of a medical colleague would not lead to a complaint under the present amendment. It is not suggested that any particular number of daily services be regarded as unduly large. In ordinary circumstances, however, 50 services a day is regarded as a reasonable upper limit. The position now is that in future any physician averaging more than 50 services a day is liable to investigation. Action under these regulations may also be taken in other circumstances where it appears that the service given does not come up to accepted standards. The amendment seems to be intended to give the patient a maximal opportunity to be fully examined by the physician.

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Skin Homografts.—Medawar and Woodruff (*Immunology* 1:27, 1958) reported some further experiments on induction of tolerance to homologous tissues. Rats of an albino strain were chosen as recipients and those of a hooded strain as donors. Skin bearing black hair was removed, and circular disks 5 mm. in diameter were punched from the excised skin and fitted into defects prepared on the right side of the chest of newborn albinos by removing skin down to the level of the panniculus carnosus. A few weeks later some groups received another skin graft from the same donor and others some thyroid grafts. The grafting of adult skin homografts to newborn rats produced immunological tolerance, as revealed by the abnormally prolonged period of survival of second homografts transplanted from the same donor eight weeks later. The tolerance produced by skin homografts transplanted at birth must be largely systemic, for the second grafts which revealed its presence lay in an entirely different lymphatic territory. Unless the regional nodes serving the second homografts had been partially unreactive to donor antigens, no state of tolerance could have been revealed. Conversely, any regional component in the tolerance produced by a skin homograft must be small, because first homografts broke down no more quickly on animals which received second homografts than on animals which did not. It is not unconditionally necessary for the first homograft, that which produced tolerance, to be continuously present for the state of tolerance to be maintained. Its excision, one month after its own transplantation and one month before the transplantation of the second graft, lowered the degree of tolerance ultimately obtained but did not abolish it completely. To the question of whether skin homografts on newborn rats can produce tolerance of tissues other than skin, such as thyroid, no final answer could be given. It is likely that skin homografts produce tolerance of thyroid homografts, but the case has not been established beyond reasonable doubt.

NORWAY

Cancer Propaganda Challenged.—Professor Leiv Kreyberg, (*Nordisk medicin*, April 24, 1958) reviewing the advances made in the past 20 years in cancer research, was struck with the paucity of significant results. He believes the importance of cytological diagnosis to be greatly exaggerated, as well as that of the use of radioactive isotopes. Because of a tendency to put the blame for late diagnoses on the patient instead of on the medical profession there is an increased urge to promote popular health propaganda. Kreyberg also believes that the more we raise our demands for early diagnosis, the more we shall be obliged to treat doubtful conditions as "potentially cancerous" and will be forced to carry out mutilating or dangerous operations needlessly. We may cure some patients in a very early stage of cancer of the cervix, but not without at the same time rendering many young women sterile, all to no purpose.

Outbreak of Typhoid.—Dr. O. Jonassen (*Tidsskrift for den norske lægeforening*, May 1, 1958) reported an outbreak of typhoid in the far north of Norway. Here a large boarding school was built in the summer of 1955 and had thrown its doors open to one group of visitors after another. Thus between June 21 and July 1 it housed a party of 70 to 80 and between July 11 and 14 another party of 65. Between July 24 and August 3, a party of 37 enjoyed its hospitality. Two members of the kitchen staff fell ill on July 19 and 28, respectively, and were admitted to hospital, where a diagnosis of typhoid was made. Altogether five cases cropped up, the patients having fallen ill and having been admitted to hospital in widely separated areas. All had in common the fact that they had lodged in the boarding school during the summer. Suspicion fell on the school's supplies of water and milk and on its sewers, but nothing was found to incriminate them. Then a scrutiny was undertaken of a list of persons in the district with a record of some infection due to Salmonella. On this list was only one person known to have lodged in the school that summer. He was a man who had suffered from typhoid in 1950. He was examined and was found to

harbor Salmonella typhi. His gall bladder was removed and his carrier state cured. It transpired that his father was found in 1946 to be a typhoid carrier. He, too, had his gall bladder removed and was thus cured of his carrier state. The present outbreak came thus to be traced back to happenings nine years earlier. Before tracking down the source of the outbreak Jonassen followed many clues in vain. One important lesson learned was that when samples of feces were mashed in glycerine water and took three to five days to reach the laboratory, a negative laboratory report might merely mean that the organisms in question died on the way.

Adaptation to Cold.—Last winter a team of scientists spent six weeks in Finnmark, Norway, comparing their own reactions to cold with those of the local population including both the migratory and sedentary Sames. On his return to Oslo, Dr. K. Lange-Andersen reported to *Aftenposten*, April 23, some of the experiences that convinced him that the comparative immunity to cold enjoyed by the Mountain Sames is acquired and not hereditary. While the members of the expedition shivered at night as they lay in their sleeping bags, the Sames were happy and showed a lower temperature and heat production, but the sedentary Sames were no better off in this respect than the newcomers to Finnmark. Tests with hands held in ice water also brought out the Comparative immunity to pain enjoyed by the migratory Sames whose general fitness was, however, nothing to boast of.

Barbiturate Addiction.—Dr. E. Kass and co-workers (*Tidsskrift for den norske lægeforening*, April 15, 1958) made a detailed psychiatric study of 137 patients treated for acute barbiturate poisoning. The mean age of the seven who died was 66.6 years. Closely questioned by a psychiatrist, about 67% of the patients who recovered admitted that there had been no serious attempt to commit suicide, and many of their relatives confessed to sad resignation to the patients' intolerance of contradiction. Among the 117 patients subjected to a complete psychiatric examination, 60 proved to be barbiturate addicts, with or without other types of narcotic addiction. In more than half the patients chronic alcoholism was a complication. The authors concluded that though the incidence of barbiturate poisoning in a general hospital may be no guide to its incidence in the community as a whole, the number of such patients not coming to hospital must be great and out of all proportion to the number hospitalized. Though it may be true that easy access to barbiturates may act as a safety valve to would-be suicides who without them would succeed in committing suicide by some other means, the case against the barbiturates is overwhelming. While general practitioners still prescribe them, Norwegian psychiatrists have ceased to do so, having become convinced that barbiturate narcomania is a more serious problem than morphine narcomania. The modern introduction of effective ataractic drugs has rendered the barbiturates less indispensable than they were. Once barbiturate addiction has become established, the prognosis is bad, and in Norway, where there are no special hospitals for drug addicts, these patients must be admitted to the observation wards of psychiatric hospitals. Prophylactic measures being more encouraging than treatment, a more rigid control of the prescription of this group of drugs is urged.

SWITZERLAND

Phenacetin and Pyelonephritis.—P. Miescher and co-workers (*Schweiz. med. Wschr.* 88:432, 1958) investigated the relationship between the intake of large amounts of phenacetin-containing drugs and the development of pyelonephritis. A group of rabbits was treated with phenacetin for seven months followed by a course of intravenous injections of Escherichia coli. Control groups received either the drug or E. coli. All animals were killed 18 days after the first injection of E. coli. A chemical analysis was made of the blood and a histological examination of the organs from all animals. Four of the seven rabbits receiving the combined phenacetin-E. coli treatment showed marked inflammatory changes of the kidney and an increased blood urea. One showed only an increased blood urea with minimal renal damage, another showed a normal blood urea with extensive interstitial inflammation, and in one animal of the phenacetin-E. coli group there was only minimal renal inflammation with unchanged blood chemistry. In contrast, no pathological changes were observed in the kidneys of the animals treated either with phenacetin or E. coli. It was concluded that the continuous application of large amounts of phenacetin-containing drugs favors the development of a hematogenous bacterial interstitial nephritis in rabbits. The mechanism of the kidney damage by the drug is not known.

Modifications of Endocrine Glands Under Cortisone.—Guignard and Ducommun (*Schweiz. med. Wschr.* 88:427, 1958) reported the functional and structural modifications of the endocrine glands of patients who had had prolonged treatment with cortisone, prednisone, and prednisolone. Apparently, degranulation of the basophil cells constitutes the chief pituitary modification due to the use of cortisone. Transformation of the entire cell accompanies this degranulation which leads to protoplasmic hyalinization such as can be seen in

Crooke's cell. Even small doses of cortisone may modify the structure of the pituitary. The resulting morphological and functional modifications are reversible, but may, nevertheless, persist for a long time. Inhibition of the ACTH secretion through direct action of cortisone on the hypophysis produces adrenal hypofunction as a secondary effect. The clinical evidence of this phenomenon appears when the cortisone treatment is discontinued, in the form of hypoglycemic symptoms and fatigue. Morphological observation reveals progressive atrophy of the adrenal cortex with rarefaction of the lipid content of the fascicular zone. This is also reversible.

Cortisone depresses the thyroid function, as shown by a drop in the absorption rate of radioactive iodine and a reduced level of protein-bound iodine. Prolonged treatment may result in permanent hypothyroidism. Histologically, the thyroid seems to be dormant, the vesicular epithelium appears flattened, and the dense and eosinophilic colloid reveals no resorption vacuoles. The decrease in thyroid function may be accompanied by goiter just as in the case of lipoid nephrosis. Through its direct action on the pancreas, cortisone seems to promote the secretion of insulin to compensate for its glyconeogenic effect. In the normal subject, the hyperglycemic curve, which is of the prediabetic type at the beginning of treatment, recovers a normal physiological aspect after several days of cortisone therapy. Certain histological modifications also appear in the pancreas, particularly an increase in the islets of Langerhans which are also hypertrophied. It was concluded that, even when used for certain therapeutic purposes, glucocorticoids still remain adrenal hormones constituting part and parcel of the endocrine regulatory system. The administration of cortisone derivatives is always accompanied by a more or less deep-seated modification of the endocrine glands.

UNITED KINGDOM

Radiation Hazard from Watches.—Haybrittle (*Nature* **181:**1422, 1958) measured the gamma-ray emission from a wrist watch with a luminous dial and estimated that it contained 2.2 μc of radium. Measurements on eight other watches showed contents ranging from 0.01 to 1.2 μc (average 0.25 μc). The watch containing 2.2 μc of radium would be expected to increase the dose of radiation to the gonads by 10% of the natural background. Should such watches become more popular with the public, then luminous watches would be second only to diagnostic roentgenography in the amount of radiation they contribute to the gonads. Irradiation of the skin under such a watch is another hazard. A film in contact with the back of the watch containing 2.2 μc of radium recorded a dose-rate of 8 mr per hour, corresponding to 0.9 r per week if the watch is worn 16 hours a day. This is nearly 67% of the present maximum permissible level for exposure to limited parts of the body, such as hands and forearms. If a watch containing 0.2 μc or less is sufficiently luminous, larger quantities than this should not be permitted.

Hospital Infections.—An editorial in *Lancet* drew attention to the high incidence of sepsis, cross-infection, and bacterial resistance in hospitals and asked: In how many hospitals is the efficacy of sterilization checked? How many provide filtered air in operating rooms, or refrain from performing operations and wound dressings in air charged with pyogenic bacteria? How many hospitals have a system for preventing staff members with septic lesions or who harbor staphylococci from attending patients? How many hospitals allow junior staff members, including nurses, to prescribe antibiotics indiscriminately? To what extent are antibiotics needlessly used as prophylactics? All too often defective sterilizers blow steam around without sterilizing. Laundries contaminate articles formerly free of pathogens. Ward maids sweep rooms in which mothers nurse their infants. Nurses make beds immediately before or even during dressing rounds. Fluffy woolen blankets fill the air with bacteria-laden dust. Nurses with furuncles remain on duty. The creation of a new post in all hospitals, that of hospital infection officer, whose function would be to deal with all these problems, to see that there is no loophole for the spread and maintenance of infection, and to prevent cross-infection and, as far as possible, bacterial resistance is recommended. Such a person should have had wide experience and be of consultant status.

Distribution of Schizophrenia.—According to the Registrar-General's statistical review the incidence of schizophrenia was greater among single than married men and greatest among persons aged between 25 and 34. The incidence increased as the social scale was descended. Of 6,599 hospitalized schizophrenics nearly 3,000 were in the category of unskilled workers or of unstated occupation. The incidence of schizophrenia in the various occupations then diminished in the following order: clerks, transport workers, agricultural workers, builders, professional workers, and finally those of independent means. On the other hand in women the highest rate was among the retired and unoccupied, who formed nearly 30% of the total. In social class 3 the rates for single men were highest among those with a high standard of education. Among married men the rate was highest for scientific workers, including physicians. In social class 2 rates were high among technical workers and

teachers but low for managers and white-collar workers. Low rates among foremen were probably due to their selection for the work. Of those in social class 4, gardeners, barmen, counter hands, hotel and apartment janitors, hospital ward attendants, and other domestic workers had the highest rates among single men. Groups with the lowest rates were miners, caretakers, and street traders. Among single men in social class 5 the rate was highest in hotel workers doing menial tasks, such as kitchen hands, liftmen, messengers, and janitors, but the rate for road workers and laborers was comparatively low.

Length of Stay in Mental Hospitals.—The average length of stay of patients in mental hospitals was under two months, according to the Registrar-General's report. It averaged 1.87 months for men and 1.98 months for women. Of 53,864 patients discharged annually, only 4% were hospitalized for two years or more and under 0.2% for five years or more. During five years admissions increased by about 23%, but this increase was largely due to the increased number of patients who entered mental hospitals voluntarily for short-term treatment and did not necessarily reflect an increased incidence of mental illness. In fact there was little change in the numbers hospitalized at the end of each year. The highest admission rate for schizophrenics was in those between the ages of 20 and 34 and for manic depressives in those between the ages of 55 and 64. The lowest rates for both illnesses were seen in the rural population.

Faith Healing.—Spiritual healing and medical treatment are two different but complementary methods of healing disease, and in many cases the restoration of complete health demands the use of both forms, according to the report on spiritual healing of the General Assembly of the Church of Scotland. The report was prepared by a commission that included 20 prominent Scottish medical, religious, and legal authorities. The commission was unable to find any evidence of faith healing alone curing serious organic disease. One of the recommendations of the commission was that university curriculums should be adjusted so as to give divinity students and medical students some insight into each other's work, as one means of discouraging quackery in faith healing. Professor Stanley Alstead, of the University of Glasgow and a member of the commission, stressed the point that spiritual healing involves a serious risk to patients unless medicine and religion cooperate closely with proper consultation and trust. The General Assembly concluded that spiritual healing should be practiced only by gifted ministers of religion and that they should practice it with discretion and only in cooperation with physicians. Only in this way could the inherent dangers of faith healing be avoided and substantial strides forward be achieved in the treatment of the sick.

Aspirin and Occult Blood.—At a joint meeting of British and Dutch rheumatologists at Leyden in April, Dr. L. Stubbe stated that, using the benzidine test, he found occult blood in the stools of 70% of 180 persons to whom aspirin had been given. They comprised 140 patients and 40 normal subjects. The result was reproducible in those persons in whom the occult blood test was positive, and the alternation of aspirin with sodium salicylate was followed by the appearance and disappearance of the occult blood from the stools. The results of the occult blood test were independent of the state in which the aspirin was administered; they were the same whether tablets or powder were given. Spectroscopic examination of the stools showed that the positive benzidine reaction was due to blood and that up to 4 ml. of blood per day might be present in the stools, a figure in excess of that lost in a normal menstrual period. Dr. Stubbe considered that this blood loss might account for the anemia seen in many patients with rheumatoid arthritis.

Pentachlorphenol Poisoning.—Menon (*Brit. M. J.* 1:1156, 1958) reported nine deaths in 18 months among workers in sawmills where pentachlorphenol, or its sodium salt, was used as a wood preservative. All the deaths were preceded by a peculiar illness which proved fatal, showing that the compound, which is used in industry as a preservative and fungicide and for the prevention of sap stain in timber, is not as safe as previously thought. All the nine deaths occurred in workers engaged in dipping timber by hand in a 1.5 to 2% solution of pentachlorphenol. None of them wore protective clothing or took any precautions to prevent contamination. Death occurred in all the patients within 24 hours of the onset of symptoms and in two within 3 hours. The principal symptoms were fever (up to 108 F [42.2 C]), sweating, dyspnea, and rapidly progressive coma. Pentachlorphenol, like dinitrocresol and dinitrophenol, causes a radical uncoupling of oxidation and phosphorylation cycles in the tissues, thus producing a marked increase in basal metabolic rate with all the effects of heat accumulation. Autopsy did not reveal any lesions of note except an inflamed gastric mucosa in three patients and edema and congestion of the lungs in two. Since the wearing of protective clothing has been compulsory and workers have been warned of the dangers of contamination of food by the hands, no further deaths or cases of poisoning have been reported.

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Acute Myocardial Infarction in a Twenty-One-Year-Old Aviation Cadet. L. E. Lamb and K. D. Kable. J. Aviation Med. **29**:263-270 (April) 1958 [St. Paul].

Although myocardial infarction is unusual in a patient less than 21 years old, the clinical history in the aviation cadet presented here was classical for such an episode. The authors believe that, if this patient had been older, there would have been no doubt concerning the diagnosis. The typical story of substernal chest discomfort occurring with exertion and radiating into the left arm, requiring morphine and oxygen for relief of pain, could hardly suggest anything else. Apparently this diagnosis was not seriously entertained inasmuch as an electrocardiogram was not made until 10 days after the onset of acute infarction. This cadet is believed to be the youngest person engaged in an active flying career in whom myocardial infarction is known to have occurred. The presence of chest pain with radiation into the left arm indicates the necessity for early electrocardiographic examination. Any doubts concerning the nature of this patient's illness could have been clarified by an electrocardiogram. The tracings recorded are typical of myocardial infarction. Pericarditis is known to cause changes in the ST segment and T waves. Occasionally pericarditis will be associated with changes involving the terminal portion of the QRS complex. However, significant changes of the QRS complex indicate disease, death, or injury of myocardial tissue itself—myocardial infarction. In this particular instance the deep QS complex in lead 1, associated with the QRS complex changes across the anterior precordium, established beyond doubt the presence of acute myocardial infarction.

It is of interest that in this particular patient many of the aspects commonly cited as aids in supporting the diagnosis of coronary artery disease were of no value. The family history gave no indication of a predilection for coronary artery disease. The lipid studies, including serum lipoprotein fractions (S_f), cholesterol level, and cholesterol/phospholipid ratio, were not unusual and may be considered entirely normal. The low atherogenic index computed mathematically from the different fractions in the S_f group should, if anything, be considered an insurance against coronary artery disease. Obesity is frequently cited as predisposing to coronary artery disease. This patient presented no evidence of obesity. X-ray examination, funduscopic examination, and the state of the peripheral vessels added nothing to the diagnosis in this instance. Although it is well known that coronary artery disease occurs in the young American male, youth still appears to be a major obstacle to the clinician in establishing the diagnosis. One is inclined to dismiss borderline electrocardiographic findings in the younger ages and weigh them more heavily in older persons. The report of significant coronary artery disease in young soldiers in Korea indicates the necessity of reevaluation of this concept.

Results in the Treatment of Myocardial Infarction with Anticoagulants. B. P. Kushelevsky and O. I. Yasakova. Terapevticheskiy Arkhiv **30**:3-10 (No. 3) 1958 (In Russian) [Moscow].

The authors report on a group of 241 patients with myocardial infarction treated with anticoagulants and on a group of 159 patients with myocardial infarction who did not receive anticoagulants. There was a mortality of 3.3% in the first group and 19.5% in the second. There were 0.8% of thromboembolic complications in the first group and 10% in the second. Recurrent myocardial infarction was noted in 2% of the first group patients and in 22.4% of the second group. Angina pectoris was observed during the postinfarction period in 34.2% of the first and in 45.5% of the second group. Restoration to complete working capacity was accomplished in 66.5% of the first group and in 54.5% of the second. The authors conclude that considerable lowering of thromboembolic phenomena in myocardial infarction can be obtained by (1) early hospitalization of the patients and early employment of anticoagulant therapy, (2) correct dosage of the anticoagulant as determined by the prothrombin index, and (3) strict observance of the regimen of rest and of diet. Early employment of anticoagulants in adequate doses during the first 4 days of the development of

The place of publication of the periodicals appears in brackets preceding each abstract.

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the myocardial infarction prevents thrombus formation in the left ventricle and the right atrium of the heart. Delayed employment of anticoagulants, after the formation of intracardiac thrombi, does not prevent the possibility of thromboembolization even in the presence of a low-prothrombin index. The anticoagulant therapy is likewise indicated during the stage of prodromal manifestations of myocardial infarction.

Effect of Beta-Sitosterol on Serum Cholesterol and Lipoprotein Levels of Patients Ingesting a Low-Fat Diet. N. Weiner, W. J. Walker and L. J. Milch. Am. J. M. Sc. **235**:405-409 (April) 1958 [Philadelphia].

Twenty-one men, between the ages of 34 to 63 years, with proved atherosclerosis, whose weight had been reduced to "lean" levels and who were placed on a low-fat diet, were given beta-sitosterol in a double-blind study. The drug was given over an 8-week period, and its administration was either preceded or followed by that of a placebo for a similar period. Although there was considerable individual variation in response to the drug, beta-sitosterol administration did result in significant reduction in mean levels of the S_f 0-12 and S_f 12-20 serum lipoprotein fractions. Changes in the S_f 20-400 lipoprotein fraction and the serum cholesterol levels were not significant. The similarity between these blood lipid responses and those occurring on a low-fat diet indicates that similar mechanisms may be operative, and that these means of reducing blood lipid levels may be, to some extent, additive. No toxic effects were observed from the daily dose of 10 Gm. of beta-sitosterol given over the 8-week period. The results indicate that beta-sitosterol has a definite effect in further lowering at least some species of serum beta-lipoprotein in patients whose lipid levels have already been reduced by dietary means.

An Analysis of 3,485 Tuberculosis Contacts in the City of Edinburgh During 1954-1955. R. G. Loudon, J. Williamson and J. M. Johnson. Am. Rev. Tuberc. **77**:623-643 (April) 1958 [New York].

A survey of 3,485 persons who were contacts of tuberculous patients was carried out in Edinburgh during 1954-1955. As the result of an invitation to all these persons to attend the chest clinic, 3,056 (88%) did and were studied. Of 1,810 persons, up to and including the age of 25 years, who were subjected to a tuberculin test, 25.5% had a positive reaction to the test when the sputum, laryngeal swab, or gastric contents of the patient who was judged by the physician to have been the most probable source of infection ("source" patient) for that particular contact were negative for tubercle bacilli on culture; 38.4% were tuberculin positive when the "source" patient's sputum, laryngeal swab, or gastric contents were positive for tubercle bacilli on culture only; and 48.8% were tuberculin positive when the "source" patient's sputum was positive on microscopic examination. There is a statistically significant difference in the infectiousness of the 3 "source" case groups. The proportion of infected contacts increases with the profusion of tubercle bacilli in the sputum of the "source" patient.

Ninety-seven (4.5%) of the 2,154 household contacts and 18 (2%) of the 902 nonhousehold contacts had significant respiratory tuberculosis. Of these 115 patients (3.8% of the 3,056 contacts), the tuberculous lesions developed in only 7 at a time subsequent to the first visit to the chest clinic, the patients having been tuberculin positive at the first visit; in 6, the tuberculous lesions developed within 6 months of the first visit. It is important to try to examine all contacts of a patient with tuberculosis at least once, but the value of follow-up examination is doubtful except in the susceptible age groups when the exposure to infection is heavy. When facilities are limited, it is probably more profitable to use them to obtain high rates of initial attendance of contacts rather than to spend them on less fruitful follow-up studies.

Observer Variation in Reports on Electrocardiograms. L. G. Davies. Brit. Heart J. **20**:153-161 (April) 1958 [London].

One hundred tracings from the files of the department of cardiology at Hammersmith Hospital, London, including 50 that had been reported to show infarction and 25 that had been reported to show some abnormality other than infarction, were selected, mixed, and given in turn to each of 10 observers who were given the choice of reporting each tracing as either normal, abnormal, or showing infarction. Of the 10 observers, 9 were cardiologists, and 1 was an experienced physician whose special interests were outside cardiology. After an interval of not less than 2 weeks, the observers were asked to report again on the same electrocardiograms. The number of tracings reported as normal by the 9 experienced observers ranged from 13 to 29, as abnormal from 20 to 44, and as showing infarction from 36 to 63. These discrepancies were considerable, and there was equal disagreement over each diagnosis. Complete agreement was reached in only 29 of the 100 tracings, majority agreement in 49, but there was considerable dispute about 1 tracing in 5. After the second reading, it was found that, on the average, the observers disagreed with 1 in 8 of their original reports.

This considerable observer variation affected the normal, abnormal, and infarction tracings equally; it was much larger than had been expected and must represent the unrecognized difficulties of electrocardiographic diagnosis. Nevertheless, the

results obtained by the 9 experienced observers were all much better than those obtained for comparison by the single inexperienced observer. The reasons for this large disagreement were examined, and the most important single cause was found to be the difficulty with the QRS-T pattern in leads 3 and aVF. There was also much uncertainty about the significance of the QR pattern in lead aVL, and many minor causes. From the standpoint of electrocardiographic diagnosis it is an illusion to believe there can be any arbitrary line between normal and abnormal tracings or between abnormal and infarction tracings. The ranges of each overlap and do so more widely than is generally realized; distinction is least clear in leads 3 and aVF. It is apparent that tracings from the intermediate zones are of little or no diagnostic value but are likely to be interpreted according to the clinical bias. In this way observer variation may add to diagnostic error. The clinical importance of this variation is debatable, but it is so large that in the absence of reliable information to the contrary its importance cannot be denied.

Congenital Absence of a Main Branch of the Pulmonary Artery: Report of Three New Cases Associated Respectively with Bronchiectasis, Atrial Septal Defect and Eisenmenger's Complex. I. Steinberg, Am. J. Med. **24**:559-567 (April) 1958 [New York].

The author reports on 2 girls, aged 5½ and 12 years, respectively, and on a 41-year-old woman with congenital absence of a main branch of the pulmonary artery. In the case of the older girl, the absence of the right pulmonary artery was associated with the Eisenmenger complex, and a small vessel arising from the ascending aorta supplied the right lung. In the younger girl, an atrial septal defect was associated with absence of the left pulmonary artery. In the adult patient, bronchiectasis of the lung was associated with the absence of the right pulmonary artery. All 3 patients had a history of recurrent respiratory infections, cough, and expectoration. The absence of 1 of the main branches of the pulmonary artery was established in all 3 patients by angiocardiography.

Congenital absence of a main branch of the pulmonary artery may be classified in 2 categories: (1) isolated absence unassociated with a cardiac septal defect, often accompanied by a high incidence of aortic anomaly and rarely associated with cystic bronchiectasis of the same lung, as occurred in the adult patient; (2) absence associated with septal defects, as occurred in the 2 girls. Unless there is bronchiectasis in the lung with the absent pulmonary artery, patients in the first group are usually asymptomatic. Pulmonary function and hemadynamic studies in the isolated types are usually within the normal range, even though oxygen uptake on the side with the absent pulmonary artery is negligible. Diagnosis of congenital absence of a pulmonary artery may often be made by inspection of the conventional roentgenogram, which shows a hypoplastic, poorly vascularized lung on one side with a fully vascularized distended opposite lung that causes mediastinal herniation. In contrast, patients with cardiac septal defects and absence of a pulmonary artery are often ill with recurrent infections, dyspnea, and cyanosis. The left pulmonary artery is usually absent, and diagnosis from study of the conventional roentgenogram is difficult.

Angiocardiography provides the definitive diagnosis of absence of a pulmonary artery main branch. Cardiac catheterization may be needed to establish the level of a cardiac shunt, whether atrial or ventricular; in the latter, it is also necessary to differentiate between the tetralogy of Fallot and the Eisenmenger complex. Angiocardiography also provides information regarding the systemic circulation in the lung with the absent pulmonary artery. Indirect evidence of bronchial arterial circulation can be demonstrated by the circulatory pattern after aortic opacification; ascending aortic pulmonary arterial branches, if present, can readily be recognized. Differentiation of the isolated from the complicated types of absence of a pulmonary artery is significant because of therapeutic and prognostic implications.

SURGERY

Congenital Aorticopulmonary Fistula: A Review of the Literature and Report of Two Cases. J. Skall-Jensen. Acta med. scandinav. **160**:221-230 (No. 3) 1958 (In English) [Stockholm].

The author reports 2 cases of congenital aorticopulmonary fistula, i. e., a communication between the ascending aorta and the pulmonary artery above the level of the semilunar valves, in a 7-year-old boy and in a 4-month-old girl. The diagnosis was made preoperatively by cardiac catheterization in the boy and by angiocardiography in the girl; in the latter patient a large arteriovenous shunt to the pulmonary artery, but no communication, was revealed by catheterization. Surgical closure of the fistula was performed on both patients. The boy died 22 hours after the operation, and autopsy revealed that death resulted from hemorrhage caused by a suture which had cut through the tissue. The girl survived the operation, and the postoperative course was uneventful.

Of 275 patients with congenital heart disease on whom cardiac catheterization was performed at the Kommunehospitalet in Århus, Denmark, only these 2 patients had an aorticopulmonary fistula. Sixty-two cases of this congenital anomaly were collected

from the literature between 1949 and 1956. Aorticopulmonary fistula thus is a relatively rare anomaly which has occurred as often in males as in females. Only 5 patients were over 15 years of age, and none was over 30 years of age. Despite some variation in the size of the fistula, the clinical aspect showed a certain uniformity. Usually the patients had cardiac complaints, most commonly dominated by dyspnea on exertion. Recurrent infections of the respiratory tract were frequently observed. Some degree of cyanosis was present in 11 patients. Physical examination revealed cardiac murmurs in all the patients. It also revealed an arteriovenous shunt to the pulmonary artery, sometimes a crossed shunt, and, with a few exceptions, considerable pulmonary hypertension in 66% of the patients with equalization of the pressures in the aorta and the pulmonary artery. It appears from these data that patent ductus arteriosus, with pulmonary hypertension and large ventricular septal defects, is the condition which should especially be considered in the differential diagnosis between aorticopulmonary fistula and other congenital anomalies. The anatomic possibility of injecting a contrast medium into the left atrium during the catheterization, which facilitated the angiocardiography in the second patient, will be rare, and, therefore, thoracic aortography must be considered the best diagnostic method if cardiac catheterization does not clarify the anatomic condition.

Comparative Laboratory Study of the Debriding Effect of Six Enzymes. J. F. Douglas, J. C. Ferriday and E. R. L. Gaughran. Am. J. M. Sc. **235**:426-430 (April) 1958 [Philadelphia].

Seven-day-old scald eschars produced in guinea pigs were used as the in vivo substrate for examining the débriding activity of a purified fig latex product, protease, and five other well-known enzyme preparations, including trypsin, crystalline trypsin, papain, papain-chlorophyll-urea, and streptokinase-streptodornase. Of all the 6 preparations used, the new protease derived from fig latex proved most active in solubilizing the necrotic tissue.

Angiocardiography as an Aid to Identification of Nonresectable Pulmonary Carcinomas. S. M. Wyman and E. W. Wilkins Jr. J. Thoracic Surg. **35**:452-460 (April) 1958 [St. Louis].

In an attempt to predict resectability of the tumor, preoperative angiocardiography was carried out in 23 patients with primary carcinoma of the lung. In order to determine the degree of accuracy of this prognostic measure, the angiographic findings in this group of patients were checked at surgical intervention. Of the various methods used for angiocardiography, the introduction of an 11 or 12 Lehman catheter by way of the deep veins of the arm on the affected side into the corresponding innominate vein and the injection of 50 to 70 cc. of a 70% solution of sodium acetrizoate (Urokon) in less than 2 seconds with a hand-operated syringe proved to be quite satisfactory. A biplane roll film changing device has been employed, providing simultaneous anteroposterior and lateral recordings at rates up to 12 frames per second in each projection. Most examinations were done at the rate of 6 frames per second for 2 or 3 seconds, followed by 2 per second for an additional 5 or 6 seconds, and finally 1 per second for a total run of 15 to 20 seconds. Twenty-four examinations were carried out in the 23 patients without a serious incident.

The following angiocardiographic evidence has been found of value in predicting unresectability of the tumor. 1. Occlusion or a severe degree of narrowing of the left pulmonary artery within 1.5 cm. of its origin from the undivided pulmonary artery; such involvement precludes separation of the branch vessel from the trunk. 2. Occlusion or severe narrowing of the branches of the right pulmonary artery to the upper or lower lobes within 1 cm. distal to the bifurcation of the right pulmonary artery. 3. Partial or complete obstruction of the innominate veins or the superior vena cava. 4. Involvement of the major pulmonary veins of the left atrium. Preoperative prediction of impossibility of resection on these grounds has been quite accurate. On angiocardiography the tumor was deemed unresectable in 13 patients, and in 11 of these it was considered unresectable on thoracotomy. In the remaining 2 patients a pneumonectomy was performed; these patients died of residual carcinoma 6 and 7 months after the pneumonectomy. Unnecessary thoracotomies may be avoided in patients in whom the tumor has been shown to be unresectable by angiocardiography.

Pathogenesis and Treatment of Traumatic Shock. A. Jacobsen. Tidsskr. norske lægefor. **78**:269-274 (April 1) 1958 (In Norwegian) [Oslo].

Traumatic shock is characterized by an acute and progressive peripheral circulatory failure which, if grave enough and not treated, leads to death. The peripheral circulatory failure, due to a reduction in the circulating blood volume, causes a general tissue anoxia affecting most of the metabolic processes. The response of the organism to the reduction of blood volume is a general vascular contraction in the arterioles. This mechanism can compensate for a loss of blood of up to 30% and gives the organism the time needed to draw to itself fluid from the extracellular spaces. If the blood volume is reduced further, the vascular contraction is exhausted, and atony of the smooth musculature in the arterioles follows. Peripheral resistance and arterial pressure fall, and the vital organs no

longer receive their portion of the blood supply. The inadequate capillary circulation causes increasing tissue anoxia and leads to loss of vital functions. Minute volume is lowered with further fall in the arterial blood pressure.

Treatment of traumatic shock requires rapid diagnosis and evaluation of the degree of shock. Injuries threatening life must be diagnosed and treated at the same time with the treatment for shock. Large external bleeding is controlled by compressing bandages, if necessary by tourniquet, and positive-pressure pneumothorax, with exsufflation; open thorax injuries are treated with airtight bandages. Traumatic shock is rarely seen in pure head injuries. Possible neurogenic shock is diagnosed by its rapid occurrence with simultaneous low blood pressure and slow pulse and often loss of consciousness. If the hypotension lasts more than 10 to 15 minutes after the patient is placed in horizontal position with feet elevated, there is probably simultaneous internal hemorrhage, and the case must be treated as one of traumatic shock. Traumatic shock develops more slowly than the neurogenic, except when there is hemorrhage from the larger vessels. In neurogenic shock it is important to explain the situation to the patient, to give him confidence and a feeling of security. Small doses of morphine are given intravenously or intramuscularly to allay pain, and barbiturate is administered intravenously in restlessness. Since the loss of blood is the direct cause, and the degree of the loss is directly proportional to the degree of the expected shock, a clinical estimate of the approximate loss should be made at once. The primary treatment in traumatic shock is replacement of the lost blood volume, and full blood is the best substitution fluid. A number of other measures, partly of practical kind, partly as medicament therapy, are necessary adjuncts but are secondary to replacement of the lost blood volume.

The Results of Partial and Total Excision of the Patella. H. L. Duthie and J. R. Hutchinson. J. Bone & Joint Surg. **40B:**75-81 (Feb.) 1958 [London].

Opinions are divided on the merits of complete, as distinguished from partial, excision of the patella. The authors performed these 2 operations on 146 patients in a Glasgow hospital during the past 10 years. Sixty-nine patients were not seen for the following reasons: 7 had died; 36 had moved and could not be traced; 10 reported satisfactory results by letter but were too far away to attend; and 16 failed to respond. Of the 77 patients who were reexamined from 1 to 10 years after the operation, 56 had been subjected to total excision of the patella, 32 of them for chondromalacia and 24 for fracture. Partial excision had been carried out on the remaining 21 patients. The results after total excision were excellent in 7, good in 26, fair in 11, and bad in 12 operations; after partial excision the results were excellent in 3, good in 6, fair in 5, and bad in 7 operations. The ages of the patients played some part in the results, better results being obtained in younger patients. There was no evidence that arthritic changes in the femoral condyles are an inevitable sequel of complete excision of the patella. There was a direct relationship between the severity of symptoms after complete excision of the patella and the extent of ossification in the quadriceps tendon. It is suggested that patellofemoral arthritis after partial excision of the patella may be due to faulty realignment of the patellar ligament and consequent tilting of the patellar remnant toward the femoral condyles. As arthritic symptoms were the main cause of disability after partial excision of the patella, it is suggested that, when there is already evidence of patellofemoral arthritis before the operation, it is preferable to excise the whole bone. In the younger patients partial excision may be expected to give a good result when care is taken to reattach the ligamentum patellae to the correct site.

Surgical Treatment of Angina Pectoris by Bilateral Ligature of the Internal Mammary Arteries: Preliminary Report. W. Rieben and G. E. Stiefel. Schweiz. med. Wchnschr. **88:**388-389 (April 19) 1958 [Basel, Switzerland].

Bilateral ligature of the internal mammary arteries was performed by the authors on 12 men and 8 women, between the ages of 43 and 78 years, with angina pectoris associated with functional or organic stenosis of the coronary arteries, who were admitted to the canton hospital in Winterthur, Switzerland, between August, 1957, and January, 1958. Myocardial infarction had occurred previously in 9 of the 20 patients. All the patients had pronounced anginal pain before the intervention. Surgical intervention was performed with the aid of local anesthesia on the first 4 patients and on the remaining 16 with nitrous oxide anesthesia, without any complications. The results of the operation were evaluated by the effect exerted on the anginal complaints and occasionally by the electrocardiographic findings. Seven patients obtained excellent results; 5, good results; and 4, satisfactory results. Four patients were therapeutic failures. Attacks of paroxysmal tachycardia no longer occurred in 2 patients after the operation. Electrocardiographic changes were less impressive in these 20 patients than in those reported by Battezzati and Tagliaferro, of Genoa, Italy; improvement in the electrocardiographic tracing was hardly noticeable in 5 patients. With the latter exception, the experiences of Fieschi and the 2 just mentioned Italian workers were confirmed as follows. The surgical intervention of ligature of both internal mammary arteries in the second intercostal space for therapy of angina pectoris does not offer great technical diffi-

culties and is not associated with any particular risk to the patient; it may, therefore, be performed under certain circumstances on even severely ill patients. The clinical results so far are highly promising. Not sufficient time has elapsed since the operations to permit a report of late results. Improvement of the abnormal electrocardiographic tracings may be obtained in single cases. The favorable preliminary experiences justify continued use of this method of surgical treatment of coronary stenosis, particularly since the associated risk is almost zero when compared with other proposed operative methods which require repeated thoracotomy. Bilateral ligature of the internal mammary arteries is to be considered a valuable addition to the routine treatment of angina pectoris.

GYNECOLOGY & OBSTETRICS

Biopsy of the Cervix: A Study of 200 Cases. L. L. Malinconico, R. Tennant and E. S. Wheeler. Connecticut M. J. **22**:279-281 (April) 1958 [New Haven].

Two hundred consecutive biopsies of the uterine cervix were performed by various methods at the Hartford Hospital. To evaluate the adequacy of these various techniques, the specimens obtained were carefully examined to determine the presence or absence of the junction line between the columnar and the squamous epithelium. Those that contained a good junction were classified as satisfactory; those with just squamous epithelium, endocervical epithelium, or no epithelium were classified as unsatisfactory. The specimens were also classified according to type of biopsy: punch, cold knife cone, and electric cautery. The punch biopsies were also evaluated according to the number of fragments submitted. The series was composed of 168 punch, 25 cold knife cone, and 7 electric cautery biopsies. Fifty-nine (35%) punch biopsies were considered satisfactory, 22 (88%) cold knife cone biopsies were satisfactory, and 3 (42%) electric cautery biopsies were acceptable. The over-all percentage of satisfactory biopsies was 42%. Further breakdown of the punch biopsies into the number of fragments submitted showed that, as the number of fragments increased, the chances of obtaining satisfactory junction increased. In the group of 1 to 3 fragments, 28 (or 28%) were satisfactory. In the remaining group of 4 or more fragments, 32 (or 46%) were satisfactory. The over-all cancer diagnosis by the punch method in 168 specimens was 4.7%; with the cold knife cone it was 40%.

The results obtained by cold knife cone biopsy on patients with positive vaginal cytology showed a 90% incidence of carcinoma, compared with a 58% incidence in a similar group on whom the multiple punch biopsy technique was used. It is of interest to note that in the latter group 5 of the 6 patients had invasive cancer, whereas 10 cases diagnosed by the cold knife cone technique were of the intraepithelial variety. These data further emphasize the desirability of the cone biopsy technique in patients in whom clinical examination of the cervix shows no evidence of disease but positive cytologic smears have been obtained. Where obvious gross disease is present, there is no need for such an extensive procedure. The punch biopsy will yield adequate material in this instance. The two most common complications that have been reported with the cold knife cone biopsy technique are bleeding, either at the time of operation or postoperatively, and stenosis of the cervical canal. The use of additional sutures at the time of operation, if needed to control bleeding, and the packing with Oxycel should be adequate to avoid any postoperative hemorrhage.

The data presented show that, to obtain the best results for accurate diagnosis, either the cold knife cone biopsy or the multiple (4 or more fragments) punch biopsy technique must be used. With a negative vaginal smear and a grossly normal appearing cervix, biopsy is not indicated. With suspicious or positive smears, either the multiple punch biopsy should be used in conjunction with Schiller's solution or the procedure of choice should be cold knife conization of the cervix.

Carcinoma of the Breast Associated with Pregnancy: Report of 56 Cases Followed Five Years or More. T. T. White. Northwest Med. **57**:477-481 (April) 1958 [Seattle].

The author reports on 56 women with cancer of the breast, 13 of whom had mastectomies during pregnancy; 17 were treated for cancer of the breast post partum, although the tumor was noted during pregnancy; 13, in whom the tumor was first noted during nursing, were treated during nursing; and 13 were operated on for cancer of the breast and subsequently became pregnant. These patients were followed up for 5 years or more. Of the 13 patients subjected to mastectomy during pregnancy, the disease was limited to the breast in 5, and 2 of these survived for more than 14 years; 1 of the 2 died of a new cancer in the opposite breast 14 years after the mastectomy, and 1 is still alive 15½ years after the operation. A third patient is without evidence of recurrence after 5 years. The 8 patients in this group who had axillary spread died within 4 years. All the local tumors occurred during the first 2 trimesters of pregnancy, and those with axillary spread occurred throughout pregnancy. Delay in treatment was the outstanding feature in the group of 17 patients in whom the cancer was detected during pregnancy but was treated after delivery. Three of the 17 patients had localized disease, and 14 had axillary spread; 2 of the 3 survived 5 or more years, and only 1 of the 14 survived this length of time. Of the group of 13 patients in whom the tumor was detected and treated during nursing, 5 had localized disease and 8 had metastases; 3 of the 5 patients survived 5 or more years, and 2 of the

8 patients survived for the same length of time. The delay in treatment in this group was zero to 12 months, conspicuously less than in the group of 17 patients. Of the 13 patients operated on for breast cancer who subsequently became pregnant, 8 had localized disease at the time of operation, and all but 1 of these survived for 10 or more years, 2 surviving for more than 30 years. The 5 patients with axillary spread were dead within 5 years. All 13 patients in this group became pregnant within 4 years or less after the operation.

These data show that many patients in whom cancer of the breast develops during pregnancy or nursing may survive for long periods of time when treated adequately. Otherwise patients with breast cancer during pregnancy are usually in an advanced stage of the disease, and for this reason often do poorly. Although there appears to be some selection of cases, the patients who become pregnant after mastectomy do well, with an unusually high percentage of 5-and-10-year survivals in this series. Two patients, 1 of the 13 with mastectomies during pregnancy and 1 of the 17 with delayed treatment, had therapeutic abortions without appreciable effect on the course of the disease. Abortion cannot be clearly shown to have a favorable effect on the course of the carcinoma.

Masculinization of Female Fetus, Possibly Related to Administration of Progesterone During Pregnancy: Report of Two Cases. A. B. Hayles and R. B. Nolan. Proc. Staff Meet. Mayo Clin. **33**:200-203 (April 16) 1958 [Rochester, Minn.].

It appears to be established that androgenic hormones administered during pregnancy may produce masculinization of the external genitalia of the developing female fetus. Progesterone, long known to manifest certain androgenic properties, has only recently been suspected of masculinizing the external genitalia of the human female infant after its administration during pregnancy. The authors cite several recent publications that suggested the possibility of a masculinizing effect of progesterone on the developing human female infant and present the histories of 2 infants with abnormalities of the genitalia. Progesterone is commonly used in the management of patients who threaten to abort. The fact that not all female infants born of mothers treated with progesterone during pregnancy become masculinized indicates that some other factor or factors probably played a role in the changes observed in the patients. The mothers of both infants described by the authors received progesterone, manufactured by the same pharmaceutical company. In case 1 progesterone was given to the mother by intramuscular injection and in extremely small amounts, while in case 2 it was given to the mother in larger sublingual doses. The problem of the possible effect of progesterone on the developing female fetus should be investigated.

PEDIATRICS

A Psychosomatic Study of Eight Children with Sydenham's Chorea. A. H. Chapman, L. Pilkey and M. J. Gibbons. Pediatrics **21**:582-595 (April) 1958 [Springfield, Ill.].

Psychosomatic studies were made of 8 children with Sydenham's chorea, who ranged in age from 7 to 16 years. When Sydenham in 1686 described childhood chorea, he wrote that emotional shocks and frightening experiences produced this illness. Not until the latter part of the 19th century did it become generally believed that Sydenham's chorea was caused by rheumatic fever. From time to time various writers have questioned the role of rheumatic fever as an exclusive cause of Sydenham's chorea. Three of the 8 children studied had a history of rheumatic fever, and 3 had no evidence of rheumatic disease; in 2 patients the evidence for rheumatic fever was equivocal, 1 probably having had it and the other probably not. All 8 children were found to be emotionally quite disturbed. Their personality structure was characterized by a triad: (1) marked passivity; (2) schizoid withdrawal from people, with 2 of the children being frankly schizophrenic; and (3) much anxiety. Obsessive, phobic, and depressive features were present in some of the children. In 5 patients the onset of Sydenham's chorea closely followed an episode of marked emotional stress, and in 2 others the correlation of chorea with emotional stress was equivocal.

The literature was reviewed, and it was pointed out that in more than half of all reported cases of Sydenham's chorea evidence of rheumatic fever could not be found. It is felt that Sydenham's chorea can be understood only as a psychosomatic illness caused by a number of agents, acting individually or jointly and varying in their respective importance from case to case. Severe personality disorder and rheumatic fever are 2 such etiological agents which may be operative in Sydenham's chorea. The importance of further psychosomatic study and experimental psychotherapy in the comprehensive medical study and management of children with this disorder is emphasized.

Ataxia-Telangiectasia: A Familial Syndrome of Progressive Cerebellar Ataxia, Oculocutaneous Telangiectasia and Frequent Pulmonary Infection. E. Boder and R. P. Sedgwick. Pediatrics **21**:526-554 (April) 1958 [Springfield, Ill.].

In the course of 7 years the authors observed 7 children with symptoms indicating a syndrome entity, for which the term "ataxia-telangiectasia" has been proposed. An additional case history obtained posthumously brought the total number of cases studied to 8. Only 2 of the children were observed by both authors. In discussing these 2 children, they found that their separate observations were

mutually confirmatory. The 8 case histories and an autopsy report are described and analyzed. The main features of ataxia-telangiectasia are as follows: progressive cerebellar ataxia with onset in infancy; progressive telangiectasia of the bulbar conjunctivas, simulating conjunctivitis, and of the butterfly area of the face; frequent sinopulmonary infection, including bronchiectasis; and peculiarity of eye movements, simulating ophthalmoplegia. Retardation of statural growth with dwarfing is a frequent feature. Intelligence is essentially normal, although difficulty with tests dependent upon visual-motor coordination is consistently observed from early childhood; test results show wide scatter, and IQ scores tend to drop below normal range as the ataxia progresses. Pneumoencephalograms give evidence of cerebellar atrophy. Autopsy reveals microscopic evidence of progressive, apparently primary, diffuse, cortical cerebellar degeneration and of enlarged venules in the cerebellar leptomeninges and white matter, without significant changes in the spinal cord.

Tests of blood and urine of 4 children failed to show evidence of an aberration in metabolism of iron or copper. Urinary concentrations of lead were also within normal limits. Electrophoretic studies of serum in 2 patients demonstrated that concentrations of gamma globulin are normal. Ataxia-telangiectasia resists precise classification among the known entities of heredocerebellar ataxia. It is believed, however, that it may be a 5th entity in the group of phakomatoses, which presently is composed of von Recklinghausen's neurofibromatosis, tuberous sclerosis, von Hippel-Lindau's disease, and Sturge-Weber syndrome. Awareness of the symptom complex of ataxia-telangiectasia will enable the clinician to recognize its varied and seemingly unrelated manifestations as those of a single clinical entity and will eliminate unrewarding diagnostic procedures. Diagnosis will permit early recognition of the unusual susceptibility to sinopulmonary infections, so that appropriate antibiotic therapy can be instituted in the management of acute episodes, or prophylactically.

Staphylococcal Pneumonia in Infancy and Childhood: An Analysis of 24 Cases. C. V. Pryles. Pediatrics **21**:609-623 (April) 1958 [Springfield, Ill.].

This report reviews experiences in the management of primary staphylococcic pneumonia in a group of 24 infants and children admitted to the pediatric service of the Boston City Hospital during a period of 23 months. The ages ranged from newborn to 42 months. There were 15 males and 9 females, a ratio of 1.6:1. Three-fourths of the patients were less than 12 months of age. The incidence was greater in the winter and spring of each year, corresponding with the seasonal incidence of respiratory infections. Almost all the patients had symptoms of upper and/or lower respiratory tract infection for a few days to approximately 3 weeks prior to admission. Cultures of nasal and/or throat swabs grew out hemolytic Staph. aureus in 21 patients. The chief complications were empyema alone or associated with pneumothorax and cyst formations (pneumatoceles).

Antibiotics were administered according to the patient's clinical response and the results of sensitivity tests. In a few patients, because of poor clinical response and a strong suspicion of pneumonia caused by resistant staphylococci, the antibotics being administered were changed prior to bacteriological and sensitivity tests. Except for a premature infant, chloramphenicol and erythromycin were substituted for penicillin and streptomycin within 24 to 72 hours after admission. The duration of antibiotic treatment was governed arbitrarily by the clinical status and the roentgenologic findings. For those who survived, the average duration of therapy was 34 days, an average of 27 days after the temperature had reached normal. Surgical treatment was carried out in 17 of the patients. Aspiration alone was performed on only 4 patients. Thirteen patients had thoracotomy with closed intercostal drainage; all 13 had empyema, which in 6 was associated with a pneumothorax (pyopneumothorax). Early in his experience it was the practice of the author to use simple aspiration, repeated as necessary, in attempts to remove empyema fluid. It soon became apparent that this was not entirely successful.

Now, as soon as the presence of empyema is established, a stab thoracotomy is carried out with a trocar and cannula, and a large (12 F.), whistle-tip, rubber catheter with multiple holes in the distal 4 cm. is inserted into the pleural space. Closed, subaqueous drainage is then begun without suction. Early surgical intervention with indwelling catheter and subaqueous drainage may also provide prophylaxis against the development of unrecognized tension pneumothorax, as may occur with the rupture of a peripheral (subpleural) abscess or with the sudden development of bronchopleural fistula. In many instances the indwelling catheter can be removed after 48 to 72 hours. It should be removed as early as possible, lest it serve as a foreign body to perpetuate a pleural inflammatory reaction. Nine of the 24 patients succumbed. Seven of the 9 deaths occurred in the infants less than 5 months of age. A high index of suspicion must exist for this type of pneumonia in any infant who presents with signs or symptoms of infection of the lower respiratory tract and who fails to respond to adequate doses of penicillin or 1 of the cyclines in a period of 24 to 36 hours.

UROLOGY

Some Metabolic Aspects of Urinary Calculi. F. R. Keating Jr. J. Urol. **79**:663-673 (April) 1958 [Baltimore].

It has been predicted that to look for primary hyperparathyroidism among patients with calcium urolithiasis or nephrocalcinosis would be rewarding in about 5% of cases, and continued screening of urologic patients for hyperparathyroidism has led to recognition of other conditions associated with excessive urinary calcium which, like hyperparathyroidism, may provoke formation of urinary calculi or nephrocalcinosis. Recognition and treatment of such disorders occasionally provide the urologist with an opportunity of putting a halt to the stone-forming process. Some of these disorders, such as primary hyperparathyroidism, hypervitaminosis D, sarcoidosis, multiple myeloma, carcinomatosis, acute osteoporosis, and Paget's disease with immobilization, are accompanied by hypercalcemia as well as hypercalciuria. In other conditions hypercalciuria may occur with normal serum calcium, as in tubular insufficiency without glomerular insufficiency (hyperchloremic acidosis) and idiopathic hypercalciuria. Careful metabolic survey of patients with renal lithiasis will disclose some who may be helped by discovery of a specific cause amenable to treatment.

A patient who has a single stone and 2 good kidneys may, of course, never have another episode. The author believes that even such patients should be investigated, at least to the extent of excluding primary hyperparathyroidism. However, the patient with repeated renal colics, multiple stones, repeated renal surgery, or damaged kidneys should receive every therapeutic and diagnostic aid available. Thorough study usually involves several estimations of serum calcium and phosphorus and an estimation of alkaline phosphatase to evaluate the need for a skeletal survey. Quantitative evaluation of calciuria is usually important. Special tests, such as the calcium-loading test, calculation of phosphate reabsorption, and the like, are usually reserved for the difficult diagnostic problems. Ruling out various sources of hypercalcemia can involve a comprehensive examination. In the absence of hypercalcemia or azotemia, estimation of serum electrolytes (sodium, potassium, carbon dioxide-combining power, chlorides) provides a basis for considering tubular disease. When equivocal data appear, repeated chemical analyses and protracted observation may be unavoidable. Metabolic surveys of patients who have stone will produce a few triumphs but only at the cost of many disappointments. The proportion of patients in whom positive findings of decisive therapeutic significance will be found is a distinct minority.

Smoking Habits of Patients with Papilloma of Urinary Bladder. J. Clemmesen, K. Lockwood and A. Nielsen. Danish M. Bull. **5**:123-128 (March) 1958 (In English) [Copenhagen].

The increase in frequency of papillomas of the urinary bladder among men in Copenhagen is parallel to the increase in frequency of and mortality from bronchogenic carcinoma, although occurring at a lower level. The proportion of smokers, especially heavy smokers of cigarettes, cigars, and cigarillos, was higher among the 367 men with papillomas of the bladder interviewed than among the normal population. The rarity of bladder papillomas suggests the existence of unknown "conditioning factors" or some predisposition of the patients besides excessive smoking, but persons who have had bladder papillomas and have thus been responsive to a causative agent will often show recurrence and often develop a malignant change. Such changes may be due to continuous exposure to causative factors, and the removal of at least some of these may be decisive for the fate of the patient. The authors advise that such patients should abstain from smoking and inhaling tobacco smoke or should restrict themselves to pipe smoking.

OPHTHALMOLOGY

Optic Neuropathy of Exophthalmic Goiter (Graves' Disease). J. W. Henderson. A. M. A. Arch. Ophth. **59**:471-480 (April) 1958 [Chicago].

Many patients with exophthalmic goiter (Graves's disease) complain of some blurring of vision, which in the majority is caused by a change in refraction secondary to increased pressure in the orbits. Less frequently, the blurring of vision is due to change in the cornea secondary to its exposure or to glaucoma. In an occasional patient papilledema is noted, and any defect of vision is attributed to this disturbance at the optic papilla. It is not well known that a disturbance of vision in endocrine exophthalmos may also develop as a result of an intrinsic disorder within the optic nerve, which may not be accompanied by papilledema or any other visible manifestation of ocular dysfunction except loss of vision. In such situations the loss of vision will be revealed only by studies of the visual fields. The author presents 6 patients with this seldom recognized disorder of the optic nerve occurring during Graves's disease. He correlates the observations on these 6 patients with those on 10 others, all reported in 1955 (4 by Igersheimer and 6 by Hedges and Scheie). All but 4 of the 16 patients were women. The average age of the patients was 56½ years. In 6 patients hyperthyroidism or thyrotoxicosis might have been a factor at the onset of the visual disturbance, and in another 3, although hyperthyroidism had once been present, it seemed to be

under control or was considered to be in remission. Five of the patients were considered to be in an euthyroid state. In 1 other patient operation had been performed on the thyroid prior to the visual difficulty. Eleven of the 16 patients showed involvement of both eyes, and 5 showed involvement of only 1 eye. All degrees of visual impairment were noted.

The defects in the visual fields were due to a central or a paracentral scotoma, to a defect of a nerve-fiber bundle, or to a combination of the two. The periphery of the visual fields was usually unaffected. Ophthalmoscopic examination failed to explain the visual loss. In 14 of the 16 patients the visual loss reached a climax and then abated. The clinical course is similar to so-called retrobulbar neuritis. To differentiate retrobulbar neuritis from the disorder under discussion, the term "optic neuropathy of Graves's disease" is proposed. Neither the clinical status of the thyroid at the onset of the disorder nor the usual treatments prescribed for the basic thyroid-pituitary dysfunction seemed to have any influence on the optic neuropathy. The prognosis is good, in that useful vision returns in the majority of the patients.

There is much speculation regarding the etiology and the pathogenesis of this neuropathy. Terms such as "neurotoxic origin" or "toxic origin" have been used. In a patient in whom recovery was exceedingly rapid on relief of the thyrotoxicosis, such a theory of neurotoxins would be difficult to refute, but this theory cannot explain all cases. The other theory, the mechanical one, is based on the clinical observation of increased volume of the retro-orbital tissues and increased orbital pressure in so-called hyperophthalmopathy of Graves's disease. This theory, likewise, does not apply to all cases, for there have been patients who did not exhibit a severe degree of hyperophthalmopathy. The author believes that the lesion also might be produced not by mechanical or toxic factors acting directly on the nerve fibers but by factors affecting the optic nerve indirectly through the medium of its vascular supply.

The Effect of Cigarette Smoking on the Intraocular Circulation. J. W. Bettman, V. Fellows and P. Chao. A. M. A. Arch. Ophth. **59**:481-488 (April) 1958 [Chicago].

A normal-sized American cigarette weighs 1 Gm. and contains approximately 20 mg. of nicotine. A person who smokes such a cigarette and inhales receives 3 mg. of nicotine. This amount produces definite effects on the cardiovascular system of man or of animals. The pharmacological action of nicotine consists of a primary transient stimulation and a secondary more persistent depression of all sympathetic and parasympathetic ganglions. In addition, nicotine stimulates the central nervous system, especially the respiratory, vasomotor, and emetic centers. There is also evidence that nicotine may act directly on the smooth muscle cells of the blood vessels to produce vasoconstriction. Studies of the effect of cigarette smoking on a series of normal humans revealed that 1 out of 5 persons showed no response. Four out of 5 who showed a response had peripheral vasoconstriction, manifested by a drop in skin temperature, increase in blood pressure, and increase in pulse rate. This effect was generally more marked in women than in men, lasted from a few minutes to a half hour, and was more marked with rapid smoking than with slow smoking and with inhaling than with puffing. The effect is only slightly reduced by the commercially available filters or denicotinized cigarettes.

The authors discuss the methods of studying the effect of smoking and nicotine on the intraocular blood vessels which are available: (1) direct observation of the vessels of the retina; (2) direct observation of the blood vessels of the choroid; (3) secondary physiological effects resulting from changes in vascularity; and (4) determination of blood volume changes in the choroid and retina by use of radioactive phosphorus. The authors have used radioactive phosphorus (P^{32}) for years in the study of factors that influence the volume of blood in the choroid and retina. They explain the method, review its use on animals, and describe studies on humans. The isotope experiments indicated that smoking increases the blood volume of the choroid in experimental animals, provided that the dose of nicotine is high. Photographic experiments indicated that smoking constricts the retinal blood vessels in a few humans, changes them not at all in most, and may actually dilate them on rare occasions.

Considering the possible explanation of these apparently inconsistent results, the authors recall that nicotine is a drug with multiple actions and varying effects. It is possible that the variations may be due to using cats for 1 type of experiment and humans for the other. It is more probable, however, that the retinal and choroidal vessels are fundamentally different. Oxygen caused no vasoconstriction of the choroidal vessels when tested on adult animals by the isotope technique. It is probable that retinal vessels respond more to direct stimulation, whereas the effect on the choroidal vasculature is likely to be secondary to alterations in blood supply elsewhere. Specifically, an agent capable of producing generalized vasoconstriction may cause the retinal and peripheral vessels to narrow, but the decrease in blood volume in the peripheral vessels may force more blood into the choroid. The choroidal vascular bed nourishes the outer portion of the retina, including the rod and cone layer, and consequently it is of fundamental importance, although it may respond differently than the retinal vessels. Contrary to popular opinion, it is possible that smoking may in some

persons increase the intraocular blood supply rather than decrease it. It actually does not seem to produce vasoconstriction in a majority.

THERAPEUTICS

Meprobamate in the Treatment of Stuttering. R. D. H. Maxwell and J. W. Paterson. Brit. M. J. 1:873-874 (April 12) 1958 [London].

Sixteen men and 2 women, between the ages of 18 and 50 years, with secondary tonic or secondary tonoclonic stuttering, who had obtained little improvement from previous speech therapy, were selected for treatment with meprobamate. One tablet of 400 mg. 3 times a day was given initially, and in some patients this dosage was increased according to effect. Six patients (33%) obtained a very good result, 8 (44%) obtained a good result, and 4 (22%) were therapeutic failures. Control tablets of identical appearance and similar taste were used in the management of 8 patients. Two claimed some subjective improvement, but the other 6 insisted that these tablets were ineffective. After active drug therapy it was possible to substitute control tablets with continued benefit to a variable extent. No useful result was obtained with the administration of meprobamate in the absence of speech therapy. Stuttering is a common condition and occasions severe handicap. Facilities for speech therapy are limited. Meprobamate is useful in relaxing the state of tension which provokes and perpetuates the condition. It has been found to be of value in restoring speech confidence, facilitating treatment, and shortening the period of speech therapy required.

Considerations on the Treatment of Tuberculous Serofibrinous Pleurisy with Adrenocortical Hormones in Combination with Chemical Antibiotics. A. Monaco and F. Roberto. Minerva med. 49:481-496 (Feb. 14) 1958 (In Italian) [Turin, Italy].

Thirty patients with tuberculous serofibrinous pleurisy were placed on adrenocortical hormone therapy combined with streptomycin and isoniazid. Primary serofibrinous pleurisy was present in 4 patients, the postprimary type of the disease in 3, and pleurisy associated with an active pulmonary or extrapulmonary tuberculous process in 13. Prednisone was given orally or topically in a dosage of 1 mg. per 2 or 3 kilograms of body weight every 2 to 5 days, and this dose was gradually changed to 1 mg. per 10 kilograms of body weight after 10 to 15 days of drug therapy. Adrenocortical therapy was maintained for 10 to 15 days after effusion disappeared. Topical therapy with prednisone was given on the days when thoracentesis was performed. Adrenocortical hormones brought about absorption of effusion in all patients with primary and postprimary pleurisy. Cortisone and hydrocortisone were not able to prevent recurrence of effusion in 2 patients with the chronic serofibrinous pleurisy. Adrenocortical hormones were effective in the control of the effusion in patients in whom pleurisy was associated with an active pulmonary or extrapulmonary tuberculosis and thus have prepared the patient for the resumed therapy of the underlying tuberculous disease. The authors conclude that the administration of a low dosage of adrenocortical hormones for a short period of time and in combination with tuberculostatic agents is a useful regimen in the treatment of pleurisy with effusion of tuberculous origin. Adrenocortical hormones probably reinforce the therapeutic effects of antibiotics.

Cycloserine in the Treatment of Human Pleuropulmonary Tuberculosis. A. Omodei-Zorini. Lotta contro tuberc. 27:1184-1203 (Dec.) 1957 (In Italian) [Rome].

The author reports on 80 patients with pleuropulmonary tuberculosis who were treated with cycloserine at the Institute "Forlanini" in Rome for 15 months during the last 2 years. A capsule of 250 mg. per day was given orally for the initiation of therapy, and this dose was gradually increased to 1 Gm. per day. Patients were divided into several groups according to their clinical picture. Six patients with recent cavitation, who had previously received slight or no antituberculous chemotherapy, derived only small benefit from cycloserine; stabilization of the disease with regression of the cavitary process was observed in 2 patients, and only temporary improvement in 4. Six patients with bronchopneumonic exudative-caseous lesions of acute initial phase and rapid progression, who had previously been treated with the common antituberculous agents, benefited from cycloserine more than the preceding group; subjective and objective improvement was observed in 3 patients, there was no change or deterioration of symptoms in 2, and 1 patient died. Cycloserine proved efficacious in the treatment of 3 patients with diffuse miliary pulmonary tuberculosis. Two patients, 1 of whom had pulmonary and laryngeal foci and the other had bone involvement, derived benefit from the drug. The therapy was discontinued in the third patient, because a partial liver insufficiency had developed during the treatment. Good results were obtained in 12 patients with recent cavities which developed in the course of a chronic or a reactivated tuberculous process; there were 7 stabilized clinical improvements, 2 partial improvements, and 3 failures. These 12 patients had previously received a collapse or resection therapy. The chronic type of pulmonary tuberculosis with static cavitation was present in 41 patients; healing of cavities and conversion of sputum were observed in 6 patients, small cavity residues and conversion of sputum in 2, slight improvement in 16, and no change, death, or deterioration in 22. Cycloserine therapy

was ineffective in patients in whom pulmonary tuberculosis was associated with chronic empyema or with pharyngo-laryngo-tracheo-bronchial involvement. To summarize, cycloserine treatment caused general and local improvement with conversion of sputum in 25 patients (30%), 15 of whom (19%) derived stabilization of the disease and healing of cavities and 10 of whom (12.5%) were left with only small cavities which have been kept under control. Slight improvement consisting in the decrease of cavitation but with positive sputum was observed in 21 patients (26%). Twenty patients (25%) did not respond to the therapy; 5 patients (6%) had deterioration of symptoms; and 9 patients died.

Toxic effects of cycloserine were mostly mild. Decrease of the peripheral arterial pressure developed in 13 patients during the first month of treatment, which was corrected without discontinuing the drug therapy. A sudden rise of temperature lasting 2 to 4 days was noted in 20 patients within the first 48 hours of the treatment. Twenty-one patients (26%) presented a mild reaction of the nervous system to the drug, but it was not necessary to discontinue the therapy; the reaction consisted of somnolence, adynamia, and mild depression, sometimes accompanied by slight headache and mild vertigo. More serious nervous-psychic disturbances, consisting of persistent insomnia, high irritability, mild delirium, and gastrointestinal disturbances, developed in 7 patients (9%); it was necessary to discontinue the chemotherapy in some of these patients. Serious nervous symptoms, including convulsive seizures and grave psychic depression, developed in 6 patients (7.5%). The author believes that cycloserine therapy is useful in the treatment of patients with chronic pulmonary tuberculosis, who do not respond to other antibiotics (streptomycin, isoniazid, or aminosalicylic acid) and in whom new cavities develop or reactivation of the tuberculous process takes place.

Sustained-Action Peritrate in Arterial Insufficiency of the Lower Extremities. S. S. Samuels. New York J. Med. **58**:1301-1302 (April 15) 1958 [New York].

Thirteen women and 9 men, between the ages of 52 and 77 years, with arteriosclerosis obliterans were given pentaerythritol (Peritrate) tetranitrate over a period ranging from 3 months to 1 year. Earlier studies were concerned with a dose of 10 to 30 mg. of the drug given 3 times daily. To minimize the annoyance of frequent medication and the consequent spasmodic action of the drug, a new form of the drug containing 80 mg. of Peritrate divided into 2 parts in the same tablet was used, each division being released and absorbed at different rates. A 20-mg. portion of the tablet is released immediately, and the remaining 60-mg. portion is released slowly over a period of about 8 hours. Thus, the patient has been able to take 1 tablet in the morning and 1 tablet at night and obtain a therapeutic blood level throughout most of the 24-hour period. The outstanding symptom of the disease was a cramp or ache in the affected extremity. Other symptoms were numbness and coldness of the toes and in some patients pain in the feet only. The symptoms were aggravated by walking.

Symptomatic improvement resulted from the treatment in 18 (78%) of the 22 patients. Oscillometric readings were improved in 11 patients (50%). A minimum of 3 weeks of treatment was necessary for the appearance of improvement in symptoms. The use of the new form of Peritrate is desirable because of its convenience in administration and its recognized beneficial effect on the symptom of angina pectoris which frequently accompanies peripheral arteriosclerosis in patients of advanced age. No noticeable or annoying side-effects were noted with sustained action Peritrate.

New Sulfonamides and Long-Acting Sulfonamides. P. Rentchnick. Schweiz. med. Wchnschr. **88**:362-368 (April 12) 1958 (In French) [Basel, Switzerland].

Antibiotics are not always effective against infections; in particular, they have not succeeded in settling the problem of urinary infections and especially that of colibacillosis. The sulfonamides, therefore, have retained certain definite indications, but they usually require the oral administration of 10 to 12 tablets of 0.5 Gm. daily. This inconvenience is eliminated with the new long-acting sulfonamides, sulfametoxypyridazin (Lederkyn) and sulfophenylpyrazol (Orisul). These preparations can be given in small doses of 1 to 2 Gm. the first day, and 0.5 to 1 Gm. thereafter. Both of these long-acting sulfonamides have interesting properties: in addition to being highly soluble in urine, very well absorbed from the intestinal tract, slowly eliminated by the kidneys, and easily diffusible in the body fluids, they have a bacteriostatic activity equal to that of diazine and superior to that of other sulfonamides. Analysis of the concentration levels obtained in various body fluids—blood, bile, pleural fluid, ascitic fluid, and cerebrospinal fluid—after absorption of small quantities of these sulfonamides shows that they are especially indicated in certain types of infections, such as cholecystitis, peritonitis, pleurisy, and bacterial meningitis. Clinical trials in 100 patients have confirmed these findings and have also established the value of the new preparations in various urinary infections. Another sulfonamide, sulfachloropyridazine, has been found to be particularly active against certain toxic strains of colibacilli. The new long-acting sulfonamides also have the advantage of not provoking modifications in the saprophytic flora. Thanks to these new compounds, sulfonamide therapy has again become a treatment of choice, side by side with antibiotics of fungal origin.

BOOK REVIEWS

The Strategy of Chemotherapy. [S. T. Cowan and Elizabeth Rowatt, editors.] Eighth symposium of Society for General Microbiology held at Royal Institution, London, April 1958. Cloth. $7. Pp. 360, with illustrations. Published for the Society by Cambridge University Press, Bentley House, 200 Euston Rd., London, N. W. 1, England; 32 E. 57th St., New York 22, 1958.

Each paper in this collection presents a different point of attack on the central theme—an elucidation of the basic mechanism of action of the various types of chemotherapeutic agents. The approach is primarily biochemical and includes discussion of host-parasite interrelationships, metabolism of micro-organisms, and the interactions of chemical substances with biological systems. The chemotherapeutic agents discussed include the sulfonamides, antibiotics, surface-active bactericides, and the agents used in the therapy of virus, fungal, amebic, and protozoal diseases. As might be expected in a field with so many gaps in knowledge, some of the ideas put forth are largely speculative. The theories advanced are, however, highly interesting, many seem plausible, and all should stimulate further research. A knowledge of the mechanism of action of the existing chemotherapeutic agents increases the likelihood of developing newer and better agents. Hence, symposiums of this type are of value in placing on a more sound, scientific basis the search for improved antimicrobial drugs, a search which in the past has depended almost wholly on random, empirical, screening techniques. The clinical aspect of drug therapy in infectious diseases is not covered in this book. In this sense, the title may be misleading to physicians who might construe, however erroneously, the term "strategy of chemotherapy" as meaning the clinical management of disease by the use of drugs. While the editors state that an effort has been made to "ensure that the papers are expressed in simple, unspecialized language," the highly technical nature of this symposium will probably be beyond the scope of interest of the average physician. This volume should be of interest to biochemists, enzymologists, microbiologists, pharmacologists, and other research workers in this rapidly expanding field.

Therapeutic Heat. Edited by Sidney Licht, M.D. Second volume of physical medicine library. Cloth. $12. Pp. 466, with 127 illustrations. Elizabeth Licht, Publisher, 360 Fountain St., New Haven, Conn., 1958.

This should prove to be a useful book for the student or specialist in physical medicine as well as for any clinician interested in physical means of treatment. The first five chapters deal with the basic aspects of heat. Of these, the chapters on the physics of heat, biophysics of diathermy, and thermal radiation, pain, and injury are generally well written but perhaps too intricate for the average clinician. The chapter on thermometry is clear and understandable and should be of particular value to anyone experimenting with heat. The chapter on the physiology of heat and cold is a fine review of the subject. The next nine chapters deal with the history of therapeutic heat, the different types of heat, and the principles of their application. These are generally well written and highly practical. The chapter on ultrasound, unfortunately, becomes too involved in clinical conditions treated, an aspect that should have been left for the following section. The last six chapters discuss conditions and diseases treated by heat. The chapters on heat in vascular disorders, heat in pelvic diseases, and heat in diseases of the eye are excellent. Because the chapters on heat in chronic rheumatic diseases, heat in orthopedics, and heat in neuromuscular disorders attempt to cover subjects too broad for a single chapter, the discussions of each disease and its treatment are incomplete. There is a useful appendix on medicolegal aspects of therapeutic heat. In general, this book is a valuable addition to the literature in a field in which there is a dearth of up-to-date books.

Health Teaching in Schools for Teachers in Elementary and Secondary Schools. By Ruth E. Grout, M.P.H., Ph.D., Professor, School of Public Health and College of Education, University of Minnesota, Minneapolis. Third edition. Cloth. $4.75. Pp. 359, with 18 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W. C. 2, England, 1958.

This third edition of a well-recognized book retains the practicality which marked the earlier volumes. The text is replete with down-to-earth suggestions for planning and carrying out classroom health instruction. Examples of procedures and methods from a wide variety of school systems throughout the United States add to the usability of the volume. The chief aim and emphasis of the book is education for improved health behavior and, as a result, improved health conditions in school and community. While recognizing that the primary responsibility for the health of children belongs to the parents, the volume stresses educational approaches by which the school can supplement and reinforce health efforts in the home. The first several chapters are concerned with general educational organization and procedures for health education, including background information on health needs of children and youth. Several chap-

These book reviews have been prepared by competent authorities but do not represent the opinions of any medical or other organization unless specifically so stated.

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ters are devoted to planning for health education within the school, within individual classrooms, and at various grade levels. Finally, the evaluation of school health education and its coordination with the efforts of the many community groups concerned with the health education of the public are considered. This edition has been brought up to date in terms of public health and medical advances as well as in changes in educational methods and approaches; new descriptions of classroom experiences are included along with newer ideas concerning the use of audiovisual materials. It provides a sound and modern textbook for the preparation of prospective teachers, and it constitutes a helpful reference for teachers in service, nurses serving the school, school medical advisers, and others concerned with health education in the school.

Theory and Problems of Child Development. By David P. Ausubel, M.D., Ph.D. Cloth. $12. Pp. 650. Grune & Stratton, Inc., 381 Fourth Ave., New York 16; 99 Great Russell St., London, W. C. 1, England, 1958.

This unusual book represents an attempt at integration in the general field of the psychological development of the child. As the author puts it, "An attempt has been made to organize and interpret the empirical findings in this field in relation to a general treatise on the nature of human development." This is an area in which many papers, books, and theories have been published. The author's selected bibliography includes works by over 1,000 writers. The book is designed to be an advanced textbook for graduate students in psychology and education. It is also intended to serve as a reference for pediatricians, adult and child psychiatrists, and others who deal with children. Its four parts include theoretical foundations of child development, beginnings of development, personality development, and special aspects of development. While the text is long, it is readable, cogently presented, and well organized. Some readers who may be closely attached to particular theories or schools of thought may object that the author's treatment of certain ideas is superficial and that he does not give proper credit to their particular insights. Generally, however, his approach is solidly grounded in medicine and he has done a scholarly, impartial, and well-rounded job. He does not neglect his own theories on ego development, such as his concepts of the "satellizing" and "desatellizing" phases in the child's early development. This book, which draws from such fields as genetics, embryology, physiology, sociology, anthropology, psychology, and psychoanalysis, should prove interesting reading for physicians and a source of reference of lasting value.

Dynamic Anatomy and Physiology. By L. L. Langley, Ph.D., LL.B., Associate Professor of Physiology, University of Alabama Medical Center, Birmingham, E. Cheraskin, M.D., D.M.D., Professor and Chairman of Department of Oral Medicine, University of Alabama Medical Center, and Ruth Sleeper, R.N., Director of School of Nursing, Massachusetts General Hospital, Boston. Cloth. $6. Pp. 719, with 313 illustrations. Blakiston Division, McGraw-Hill Book Company, 330 W. 42nd St., New York 36; 95 Farringdon St., London, E. C. 4, England; 253 Spadina Rd., Toronto 4, Canada, 1958.

This book is similar in manner to "The Physiology of Man" by Langley and Cheraskin, which appeared in 1954. Both reflect the fear of pedantry that has struck modern educators. In the present work the proposition that "learning can be fun" has been extended to include anatomy. The adjective "dynamic" presumably applies especially to the anatomy, since static physiology would be a contradiction in terms. The authors' discussion of dynamic processes on page 38 is unfortunately rendered puzzling by the confusion of the two words "static" and "steady." The informal style, with its studied avoidance of the customary, the academic, and the precise, sometimes lapses into the inexact and the obscure. About the general competence of the authors, however, there can be no doubt. The book is full of detailed and up-to-date information, and it deserves special praise for a wealth of new illustrations, many of them uncommonly beautiful and instructive. It is intended not as a compendium of information but rather as a textbook for students of diverse interests; the bibliography therefore suggests only a few sources of collateral reading, instead of offering a key to the investigative literature. This book can be recommended as an attractive introduction to anatomy and physiology for students in the ancillary healing arts.

Methods and Materials of Health Education. By Robert E. Schneider, M.S.P.H., Ed. D., Director, Division of School Health, Department of Education, Waterbury, Conn. Cloth. $5. Pp. 382, with 29 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W. C. 2, England, 1958.

This new book constitutes a practical compendium of techniques and procedures for improving the quality of school health education. It also provides detailed descriptions of resources for health education and illustrations of the applications of method to the use of these materials. Although school health education is seldom planned and carried on with the same intensity as the more traditional subjects, life science deserves equal emphasis in the curriculum in terms of attention to materials and methods as these influence the general quality of instruction. Without minimizing the value of factual approaches, the volume stresses the need to provide concrete and realistic health education experiences for children and youth. The book is divided into five parts, the first of which

is concerned with definition and delineation of the school health program; part 2 deals with curriculum formulation and development, part 3 with teaching techniques and procedures, part 4 with materials and their presentation, and part 5 with measurement and evaluation. In general, the organization of the book is good and the presentation clear and concise. There is sufficient detail, however, to give the volume usefulness for both the prospective teacher and those in service who wish to improve their skills for health education. It is to be regretted that the name chosen for the volume is so similar to that of an earlier book in the field. Confusion could have been avoided by selecting a more distinctive title.

The Chemistry and Chemotherapy of Tuberculosis: A Compilation and Critical Review of Existing Knowledge on the Chemistry of Tubercle Bacilli and Their Products, Chemical Changes and Processes in the Host, and Chemical Aspects of the Treatment of Tuberculosis. By Esmond R. Long, M.D., Ph.D., Sc.D. Third edition. Cloth. $12. Pp. 450, with illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2, 1958.

This third edition of a monumental work adds to the historic records of investigation into the chemistry of the tubercle bacillus and tuberculosis. The initial volume by Wells, written 35 years ago, found a warm place in the hearts of all interested in tuberculosis. This invaluable compilation played a part in the strides made in the chemotherapy of tuberculosis which was in its infancy when the first edition was published. The reference list includes the names of all who played a part in this important development. Although the new edition is entirely rewritten, the original organization of chapters and sections are, for the most part, preserved. Section 1 deals with the chemistry of the tubercle bacillus, section 2 with chemical changes in the tuberculous host, and section 3 with the chemotherapy of tuberculosis. All phases of these subjects are exhaustively covered from the early periods to the present. There is an appendix on the general scheme of bacterial fractionation and one giving a chart of constituents of mycobacteria, with references; a third lists references to review articles up to 1957. This volume should prove of great value for students, investigators, and specialists concerned in any way with tuberculosis and its biochemical problems.

Practical Clinical Chemistry: A Guide for Technicians. By Alma Hiller, Ph.D., Associate Professor of Biological Chemistry, University of Illinois College of Medicine, Chicago. [Second edition.] Cloth. $6.50. Pp. 265. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 24-25 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, Canada, 1957.

This volume is intended as a laboratory guide for the technician in the clinical laboratory, and it should serve this purpose adequately. The tests are simply written, giving much detail, and the calculations are set up in equation form. The book includes most of the routine tests performed on body fluids in hospital and private clinical laboratories. The first three chapters are on subjects of general interest, such as techniques, equipment, standard solutions, and photometry, and the remainder deal with specific tests. These chapters on tests include a section on reagent preparation, test procedure, calculations, and an outline of the determination. The outline is also included as a tear sheet at the end of the book and may serve as a convenient desk reference for the technician. An occasional chapter is prefaced with a very brief discussion of the principles on which the test is based. It would add much if each test was so prefaced. The book is adequately indexed.

Vertigo and Dizziness. By Bernard J. Alpers, M.D., Sc.D., Professor and Head of Department of Neurology, Jefferson Medical College, Philadelphia. Modern Medical Monographs. Editor-in-chief: Irving S. Wright, M.D. Cloth. $5. Pp. 120, with 4 illustrations. Grune & Stratton, Inc., 381 Fourth Ave., New York 16; 99 Great Russell St., London W. C. 1, England, 1958.

Vertigo or dizziness touches all fields of medical practice. It constitutes a problem commonly encountered by the general practitioner, otologist, internist, and neurologist. The author maintains that vertigo lends itself to logical analysis, although it is often difficult to treat, largely because the nature of the underlying mechanism is not always clear despite several current hypotheses. Vertigo develops as the result of different mechanisms, operating from widely separated areas and from a large number of causes. With these limitations, this small book provides a competent, lucidly presented introduction to the anatomic and physiological basis of vertigo, the mechanisms responsible for its production, symptoms and signs, causes, diagnosis, and treatment. The references are selective and largely clinical in nature. This book is recommended as a valuable addition to any busy clinician's library.

Practical Pediatrics. By R. Cannon Eley, M.D., Assistant Clinical Professor of Pediatrics, Harvard University, Cambridge, Mass., and Benjamin Kramer, M.D., Director of Pediatric Services, Maimonides Hospital, Brooklyn. Handbooks for general practitioner [series]. Cloth. $7. Pp. 309, with illustrations. Landsberger Medical Books, Inc., distributed by Blakiston Division, McGraw-Hill Book Company, Inc., 330 W. 42nd St., New York 36; 95 Farringdon St., London, E. C. 4, England, 1958.

This small volume presents a practical approach to pediatrics and should be of great value to the general practitioner. Chapters such as those on fluid and electrolyte balance and poisoning are simple and informative. The management of diseases is described effectively in short paragraphs. This is a handy book which the general practitioner should find useful.

QUESTIONS AND ANSWERS

GASTROINTESTINAL BLEEDING

To the Editor:—*Would vitamin K_1 be of any value in treatment of an elderly man who has massive gastrointestinal bleeding but whose prothrombin time is normal? Is there any basis for limiting blood transfusion, even if the hematocrit value is far below normal (24%), for fear of elevating the blood pressure and "blowing out" the clot?*

Antonio D. Talusan, M.D., Baltimore, Md.

Answer.—No benefit is to be expected from giving vitamin K_1 when the prothrombin time is normal. The name antihemorrhagic vitamin, which is often applied to vitamin K, is unfortunate, since it helps to foster the illogical practice of administering indiscriminately this agent for any type of hemorrhage. Blood transfusion is given when any massive hemorrhage occurs for a twofold purpose: (1) to keep the hemoglobin at a safe level, and (2) to correct any possible hemostatic defect. Since stored blood loses several basic factors needed for the coagulation of blood, it is often ineffective and valueless in bringing about stanching. It is doubtful whether a reasonable increase in the blood pressure can mechanically dislodge a clot. It is a common observation, however, that transfusions of large quantities of blood often result in a bleeding tendency characterized by capillary oozing. It might be well, therefore, whenever large quantities of stored blood have to be transfused, to alternate occasionally with a transfusion of fresh plasma.

CALCIFICATION OF THE ADRENALS

To the Editor:—*What is the significance of and course of therapy to be followed in the case of a 3-year-old girl with bilateral calcification of the adrenals? There is a history of exposure to tuberculosis but no other evidence of disease.*

Herbert G. Barber, M.D., Homer, Neb.

Answer.—Bilateral calcification of the adrenals, in the circumstances stated, should alert one to the possibility of Addison's disease or hypoadrenocorticism, although tuberculosis as a cause of Addison's disease in children is rare. Calcification of the adrenals does not necessarily indicate Addison's disease, since 90% of the gland has to be destroyed before clinical manifestations occur. Tuberculosis of the adrenals is seldom primary. More commonly, there is tuberculosis of the lungs, genitourinary tract, gastrointestinal system, bones, and other structures. Tuberculosis of the adrenals begins in one adrenal and later spreads to the other. The process begins in the medulla and progresses towards the periphery, involving the cortex. The involvement is slow and progressive in nature; there occurs a compensatory cortical hypertrophy of the uninvolved cells, and, therefore, the appearance of Addison's disease tends to be insidious. It usually runs a benign course, with predominance of gastrointestinal symptoms. Other early symptoms and signs are weakness, lassitude, anorexia with weight loss, and pigmentation, particularly of exposed areas of the skin, such as the face, the neck, and the backs of the hands, as well as of areas of the body exposed to friction. If hemorrhage occurs in the adrenal cortex, with resulting destruction of the adrenal cortical tissue, acute adrenal cortical insufficiency results, with marked anorexia, nausea and vomiting, dehydration, and shock. Helpful diagnostic procedures for adrenocortical function in a 3-year-old child include the ACTH test, the water test, and the 24-hour fasting test. Changes in serum electrolytes occur usually in acute adrenal cortical insufficiency. Urinary cortical steroid excretion studies are not indicated.

MUMPS SKIN TEST

To the Editor:—*Is the mumps skin test reliable and accurate in detecting and measuring a patient's immunity? A reaction of 1.5 cm. of erythema has been used as a dividing line between positive and negative reporting; is this still a valid index? Does the degree of erythema indicate at all the degree of immunity, and should that be a factor in recording positive or negative results? This problem very frequently confronts physicians in adult medical practice.*

M.D., Illinois.

Answer.—The mumps skin test is a fairly reliable way to differentiate between susceptibility and immunity. However, on the basis of this test it has been ascertained that about one-third of all adults are immune because they had subclinical or inapparent parotitis infection with the mumps virus. The intradermal administration of 0.1 ml. of the inactivated, diluted suspension of the vaccine is best performed on a cleansed site of the left forearm. A reaction of more than 11 mm. in diameter 48 hours later is considered to indicate immunity. The result of the test is useless as a diagnostic aid,

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because it may not become positive until weeks after recovery from the disease. The intensity of the erythema is no index of increased immunity and should be disregarded.

ANSWER.—The criteria used for the interpretation of the mumps skin test have changed very little since they were first enunciated. Most investigators still prefer to break down the reactions as follows: an erythema of less than 10 mm. in diameter is considered a negative result, between 10 to 15 mm. a doubtful finding, and 15 mm. or larger a positive reaction. The significance of the test rests mainly on the size rather than on the intensity of the erythema. Using the above criteria on approximately 2,000 individuals, some investigators found that 1% with positive, 5% with doubtful, and 19% with negative results developed mumps at a later date. A positive reaction can, therefore, be regarded as a reliable proof of immunity. A negative reaction, however, is not necessarily indicative of a susceptible status.

GENERALIZED JOINT STIFFNESS

TO THE EDITOR:—*A 32-year-old woman began complaining of generalized joint stiffness and lameness early in April. A week later she developed edema of both ankles. There has been no fever. An x-ray revealed bilateral hilar adenopathy and prominent perihilar bronchial lung markings. Her sedimentation rate and blood cell count are normal. The report on a biopsy of gastrocnemius muscle by a pathologist indicated chronic nonspecific perivasculitis with no evidence of primary vascular disease. The patient is on therapy with bed rest, a high-calorie diet, and exercises. With this treatment she feels better and looks generally improved. On awaking she feels a general lameness with stiff joints, especially those of her hands. Activity brings return of the ankle edema. Please suggest further treatment and additional diagnostic procedures.*

M.D., Maine.

ANSWER.—The manifestations which have so far appeared do not suffice for a definitive diagnosis. In the absence of fever, leukocytosis, and acceleration of the sedimentation rate, it is difficult to correlate the joint symptoms with the findings in the chest x-ray or to explain them on the basis of widespread arteritis. Rheumatoid arthritis seems to be the least unlikely tentative diagnosis, although the normal sedimentation rate is not the usual finding in the active stage. Other collagen diseases are possibilities but not probabilities. The findings in the biopsy of the gastrocnemius muscle are most likely nonspecific. Roentgenograms of the affected joints may be of diagnostic help. Since there is hilar adenopathy, the sternal marrow should be examined. Pending a definite diagnosis, treatment should be merely supportive, with aspirin for the joint stiffness and salt restriction and perhaps chlorothiazide for the edema until the diagnosis is established. Steroids would probably help the joint manifestations but should not be used without a more definite diagnosis. Bed rest does not seem to be indicated, even though swelling of the feet is greater when the patient is up and about.

HAZARDS OF USING PARENTAL BLOOD FOR MEASLES MODIFICATION

TO THE EDITOR:—*In order to modify measles in children as well as in adults, it is often tempting to use another person's blood for injection—in case of an ill child, the blood taken from one of the parents. In the absence of any history of infectious hepatitis, for which there seems to be no valid positive test at present, is such a procedure permissible? Would it be safe without a test for syphilis performed on the donor when such is the father or mother of the child? How infectious is, for instance, 10 ml. of whole blood taken from a syphilitic individual?*

M.D., New York.

ANSWER.—Parental blood was used extensively in the past for the modification or prevention of measles. However, it is no longer recommended, for a number of reasons. In the first place, it carries a definite hazard of transmitting hepatitis and, as the inquiry indicates, there is no way to rule out this risk. Second, injection of **Rh**-positive whole blood into **Rh**-negative females incurs a serious risk of sensitization to the **Rh** factors, and this can mean, under certain circumstances, that an otherwise healthy young woman will never be able to have more than one child, simply as a result of such an injection of whole blood. Third, there is no way of determining the actual dose of measles antibodies given in an injection of adult blood, so that the chance of failure to prevent measles is high. Fourth, the risk of transferring syphilitic infection, though slight, cannot be excluded in the absence of a serologic test and a careful history and physical examination. All of the above hazards and uncertainties would be avoided by the use of immune serum globulin (gamma globulin), which is generally obtainable through local health departments —in New York State and elsewhere—for use in prevention or modification of measles, provided there is a clear-cut indication for doing so; the ground rules may vary somewhat from state to state. In addition, gamma globulin can be purchased through any local pharmacy or wholesale druggist. Since gamma globulin is free of hepatitis virus, syphilis spirochetes, and **Rh** antigens and is fairly accurately titrated for potency, there is no longer any justification for the use of whole blood for the control of measles.

PORT-WINE BIRTHMARK

To the Editor:—*What can be done for a newborn infant with an extensive, superficial, port-wine stain (nevus flammeus) birthmark? The child, a girl, is now 1½ months old. The birthmark covers the left hand, arm, and shoulder and extends over the neck into the hair line and over a portion of the back. The thumb and forefinger are unaffected, as are a few small scattered spots in the affected area. On digital pressure, this area blanches and momentarily becomes normal in color. It darkens when she cries or becomes cold and when the arm hangs down. Consultants' opinions vary from the statement that nothing can be done to the belief that the use of x-ray, dry ice, or radio-phosphorus will help. Since this is the firstborn child, what is the possibility of occurrence in further siblings?*

Todd M. Mulford, M.D., Long Beach, Calif.

Answer.—A consultant actually seeing this patient is in a better position to diagnose and treat the cutaneous condition than one merely having a description of the problem. However, the recognized treatment for such lesions is alpha ray therapy in the form of thorium-X. This preparation is used in the strength of 300 μc per cubic centimeter and is applied once a month. A lacquer or alcohol solution can be painted on. A trial of therapy should last at least 6 to 12 months, but maximum benefit requires about 24 monthly treatments. The possibility of benefit is around 50%. The lesion seems to be too extensive for plastic surgery to give a good cosmetic result. The chances of subsequent children having a similar condition are no greater than in other families in which such congenital defects as hernia or cardiac valvular lesions appear. In other words, congenital defects often occur in families, but there is no specific hemangiomatous familial tendency. The prognosis as to cosmetic result in this patient must be guarded.

RESIDUAL URINE

To the Editor:—*What amount of residual urine is considered pathologic for a patient with prostatism? Is prostatism with the presence of an abnormal amount of residual urine a contraindication to an elective operation? (The urine has no pus, the blood urea nitrogen level is normal, and the kidneys are normal as shown on x-ray.) How is prostatism with frequency and abnormal residual urine treated when it occurs after a gallbladder operation?* *M.D., New York.*

Answer.—Any amount of residual urine in the bladder should be considered pathologic. There are many etiological factors other than prostatic obstruction which might cause this condition. If the residual urine is caused by prostatic obstruction, the indication for operation would depend to some degree on the presence of clinical complications. Over 60 cc. of residual urine is generally regarded as evidence for surgical intervention. There are cases, however, in which presence of a small amount of residual urine may continue for years without any complications, and, if other clinical data contraindicate it, the surgeon may decide against operation. The amount of residual urine or the extent of the prostatic enlargement, as a rule, should not prevent an elective operation. Prostatism with frequency and an appreciative amount of residual urine should be regarded as an indication for surgery, irrespective of whether it occurs after an operation for some other disease.

TRAUMA DURING PREGNANCY

To the Editor:—*Is trauma considered to be of any etiological importance in abruptio placentae or eclampsia? If so, is there any documentary proof of the relationship?*

Arthur Weinberg, M.D., Far Rockaway, N.Y.

Answer.—It has not been proved that there is any connection between trauma and eclampsia. However, in a few instances, trauma may cause a separation of the placenta. In 67 cases of abruptio placentae reported by Davis and McGee (*Surg., Gynec. & Obst.* **53**:768, 1931), only 3 were associated with trauma. During labor, several accidents or factors may cause detachment of the placenta: sudden emptying of a large polyhydramnios, the loosening of the placenta which sometimes follows the delivery of the first twin, manipulation during version, the use of rubber bags and bougies, and violent traction on the placenta by a cord that is actually or relatively too short. However, all of these are rare.

ATHLETICS AND PROLAPSE OF THE UTERUS

To the Editor:—*Is bowling (not necessarily during pregnancy) a hazardous sport for women? Would carrying a heavy bowling ball, approaching the foul line with the legs and thighs widely separated, and exerting extreme strain while throwing the ball tend to cause prolapse of the uterus or other gynecologic disturbance?*

M.D., Ohio.

Answer.—Bowling or other forms of the usual athletic activities indulged in by women will not usually cause any untoward gynecologic disturbance. The nonpregnant uterus is, in reality, a very small organ, weighing but a few ounces and well supported. Let's not forbid athletics for women on any such theory as the cause of prolapse of the uterus.